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FHWA- IOWA- EIS- 83- 01- F  
FEDERAL HIGHWAY ADMINISTRATION  
REGION 7

CBD Loop Arterial  
Des Moines, Polk County, Iowa

ADMINISTRATIVE ACTION  
FINAL  
ENVIRONMENTAL IMPACT STATEMENT

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
IOWA DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION  
AND  
CITY OF DES MOINES, IOWA

SUBMITTED PURSUANT TO 42 U.S.C. 4332 (2) (C) 23 U.S.C. 128 (a)  
49 U.S.C. 1653 (f) and 16 U.S.C. 470 (f)

DEC 28 1987

DATE

Kent W. Buehler

FOR THE HIGHWAY ADMINISTRATOR  
FEDERAL HIGHWAY ADMINISTRATION

ABSTRACT - THIS PROJECT INVOLVES THE CONSTRUCTION OF A FOUR - TO SIX - LANE, DIVIDED HIGHWAY FROM THE JUNCTION OF HARDING ROAD WITH INTERSTATE 235 TO U.S. HIGHWAYS 65 AND 69 AT SCOTT AVENUE. THE FOLLOWING PERSONS MAY BE CONTACTED FOR ADDITIONAL INFORMATION CONCERNING THIS DOCUMENT

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## TABLE OF CONTENTS

	<u>Page No.</u>
SECTION 1. SUMMARY OF STATEMENT.....	1.1
Description of Action.....	1.1
Actions Required by Other Federal Agencies.....	1.1
Alternatives.....	1.1
Probable Environmental Impacts.....	1.2
Areas of Controversy.....	1.2
Reviewing Agencies.....	1.3
SECTION 2. PURPOSE OF AND NEED FOR ACTION.....	2.1
Location and Description of the Proposed Action.....	2.1
Metropolitan Transportation Planning.....	2.1
Purpose of the Proposed Action.....	2.2
Need for the Proposed Action.....	2.2
Traffic Congestion.....	2.2
North-South Corridor.....	2.3
East-West Corridor.....	2.4
Indianola Avenue-CBD Connection Corridor.....	2.4
E. 14th/E.15th Street-S.E. 14th Street Corridor.....	2.5
Community Planning.....	2.5
Traffic Accidents.....	2.6
Interface of Proposed Action with Air, Rail and Transit Facilities.....	2.8
SECTION 3. ALTERNATIVES.....	3.1
Development of Alternatives.....	3.1
Summary of Description of Alternatives.....	3.2
North-South Segment.....	3.2
East-West Segment.....	3.3
Description of Preferred Alternative.....	3.4
North-South Segment.....	3.4
East-West Segment.....	3.5
Associated Street Connections, Extensions and Widenings - Preferred Alternative.....	3.6
Indianola Avenue Connection.....	3.6
E. 15th Street Extension.....	3.7
Associated Street Widenings.....	3.8
Right-of-Way Requirements.....	3.8
Description of Alternatives Evaluated in Detail in the Draft EIS.....	3.9
Major Alternatives - A and B.....	3.9
Alternative A - Northern Variation.....	3.9
Alternative B - Southern Variation.....	3.11
15th Street-Tuttle Street Extension.....	3.13



TABLE OF CONTENTS  
(Continued)

	<u>Page No.</u>
No Action Alternative.....	3.14
Transportation System Management Alternative.....	3.15
Alternatives Considered, Partially Evaluated and Deleted from Further Consideration in the Draft EIS.....	3.16
CBD Loop Alternatives.....	3.16
Harding Road-19th Street-Pleasant Street Alternative.....	3.16
Harding Road-Fleur Drive-Raccoon River-Scott Avenue Alternative.....	3.17
Harding Road-19th Street-One-Way Couplet Alternative.....	3.18
Harding Road-19th Street-Center Street Alternative.....	3.19
Fleur Drive-Market Street Alternative.....	3.20
Harding Road-Market Street Alternative.....	3.20
Tuttle Street Alternative.....	3.21
Scott Avenue-Maury Street Alternative.....	3.22
Raccoon Street-Maury Street Alternative.....	3.22
15th Street Alternative.....	3.23
High Street Alternative.....	3.24
Tuttle Street-Scott Avenue Alternative.....	3.24
Tuttle Street-Elm Street Alternative.....	3.24
S.E. First Street Alternative.....	3.25
S.W. First Street-S.E. First Street Alternative.....	3.26
S.E. 14th Street Alternative.....	3.27
Indianola Avenue Connection Alternatives.....	3.25
S.E. 14th Street-S.E. 15th Street Alternatives....	3.27
15th Street Connection Alternative.....	3.28
Fleur Drive-15th Street Alternative.....	3.28
Street Widening Alternatives.....	3.28
Street Widening Alternative No. SW-1.....	3.28
Street Widening Alternative No. SW-2.....	3.31
Street Widening Alternative No. SW-3.....	3.32
Summary of Street Widening Alternatives.....	3.34
Grand Avenue-18th Street-Locust Street-Fleur Drive Area Street Modification Alternatives.....	3.34
Alternatives Considered Subsequent to the Draft EIS and Public Hearing.....	3.35
North-South Segment.....	3.35
Alternative C.....	3.35
Alternative D.....	3.37
East-West Segment.....	3.37
Alternative E.....	3.38
Alternative F.....	3.39



TABLE OF CONTENTS  
(Continued)

	<u>Page No.</u>
Mulberry-Cherry One-Way Couplet.....	3.40
Court Avenue from Fifth Avenue to E. 15th Street.....	3.42
Indianola Avenue Connection.....	3.43
Alternative G.....	3.43
Alignment Variation in Elm Street Corridor.....	3.45
Modification of Interchange in the Des Moines Water Works.....	3.45
Modification of E. 15th Street Extension and S.E. 14th Street Improvements.....	3.46
Basis for Selection of Preferred Alternative.....	3.46
North-South Segment.....	3.47
East-West Segment.....	3.47
Indianola Avenue Connection.....	3.47
E. 15th Street Extension.....	3.48
Other Considerations.....	3.48
 SECTION 4. AFFECTED ENVIRONMENT.....	 4.1
Natural Environment.....	4.1
Social Environment.....	4.5
Economic Setting.....	4.7
Land-Use Trends.....	4.8
Existing Land Use.....	4.8
Future Land Use.....	4.10
 SECTION 5. ENVIRONMENTAL CONSEQUENCES.....	 5.1
Relocation Impacts.....	5.1
Residential Relocation Impacts.....	5.1
Relocation of Non-Profit Organizations.....	5.3
Commercial Relocation Impacts.....	5.4
Neighborhood Impacts.....	5.6
Callanan Neighborhood.....	5.7
Willard Neighborhood.....	5.13
Hiatt Neighborhood.....	5.18
Weeks Neighborhood.....	5.20
Downtown Neighborhood.....	5.23
Brody Neighborhood.....	5.25
Impacts to Churches, Schools and School Pedestrian Safety.....	5.26
Impacts to Community Facilities.....	5.26
Emergency Services.....	5.26
Utilities.....	5.27
General Economic Impacts.....	5.28
Effects on Development.....	5.28



TABLE OF CONTENTS  
(Continued)

	<u>Page No.</u>
Effects on Employment and Business.....	5.29
Effects on Tax Base and Reserve.....	5.30
Effects on Public Expenditures.....	5.31
Utility Costs.....	5.31
Road-User/Accident and Maintenance Costs.....	5.31
Impacts to City-Owned Property.....	5.33
Impacts to Parks and Recreation Areas.....	5.34
Description of Section 4(f) and 6(f)	
Involvement.....	5.34
Sam Cohen Park.....	5.34
Riverside Park.....	5.35
River Front Open Space Development Areas.....	5.36
Des Moines Water Works.....	5.37
Other Impacts to Park and Recreation Areas.....	5.38
Impacts to Pedestrians and Bicyclists.....	5.39
Impacts to Land-Use Planning.....	5.39
Impacts to Architectural and Historic Resources.....	5.40
National Register Eligible Properties Within the	
Proposed Right-of-Way.....	5.41
Capital City Woolen Mills.....	5.41
Clifton Heights United Presbyterian Church...	5.41
Sherman Hill Historic District.....	5.42
Woodland Cemetery.....	5.42
National Register Listed or Eligible Properties	
in the CBD Loop Project Area.....	5.42
Measures to Minimize Harm.....	5.43
Alternative Alignments Considered.....	5.43
Impacts to Archaeological Resources.....	5.43
Site 13PK61.....	5.44
Project Impacts.....	5.45
Measures to Minimize Harm.....	5.45
Alternative Alignments Considered.....	5.45
Noise Impacts.....	5.46
Highway Noise Fundamentals.....	5.46
Sensitive Site Analysis.....	5.47
Evaluation of Noise Impacts and Abatement	
Measures.....	5.48
Noise Contours.....	5.51
Construction Noise.....	5.52
Air Quality Impacts.....	5.52
Existing Air Quality.....	5.52
Carbon Monoxide.....	5.53
Suspended Particulate.....	5.54
State Implementation Plan.....	5.55
Flood Plain Impacts.....	5.55



TABLE OF CONTENTS  
(Continued)

	<u>Page No.</u>
Impacts to Natural Features.....	5.60
Vegetation Impacts.....	5.60
Wetlands.....	5.61
Wetlands Finding.....	5.62
Water Quality and Water Supply.....	5.62
Mineral Resources.....	5.64
Other Resources.....	5.64
Impacts to Aesthetic Qualities.....	5.64
Construction Impacts.....	5.65
Energy Impacts.....	5.67
Summary and Comparison of Alternatives.....	5.67
Benefits and Adverse Effects of the Preferred Alternative.....	5.68
Impacts of the No Action Alternative.....	5.70
Comparison of Alternatives.....	5.71
Mitigative Measures.....	5.73
 SECTION 6. COMMENTS AND COORDINATION.....	 6.1
Draft EIS.....	6.1
Final EIS.....	6.4
 SECTION 7. LIST OF AGENCIES, ORGANIZATIONS AND PERSONS TO WHOM COPIES OF THE DRAFT EIS WERE SENT.....	 7.1
 SECTION 8. LIST OF PREPARERS AND INDIVIDUALS CONSULTED.....	 8.1
 INDEX	

APPENDICES

APPENDIX A. TRAFFIC VOLUMES AND GEOMETRIC DESIGN CRITERIA	
APPENDIX B. CITY OF DES MOINES LAND-USE POLICIES	
APPENDIX C. AERIAL PHOTOGRAPHS OF PROJECT AREA - PREFERRED ALTERNATIVE	
APPENDIX D. AERIAL PHOTOGRAPHS OF PROJECT AREA - ALTERNATIVES A AND B	

TABLE OF CONTENTS  
(Continued)

APPENDIX E. COMMENTS AND COORDINATION

- Part 1. Agency Review Comments on Draft EIS
- Part 2. Coordination Prior to Final EIS
- Part 3. Location Design Hearing Summary

FINAL SECTION 4(f) STATEMENT

APPENDIX VOLUMES

- VOLUME I. CULTURAL RESOURCES OF THE CBD LOOP ARTERIAL PROJECT AREA, HISTORY AND ARCHITECTURE.
- VOLUME II. CULTURAL RESOURCES OF THE CBD LOOP ARTERIAL PROJECT AREA, PHASE I INVESTIGATION.
- VOLUME III. CULTURAL RESOURCES OF THE CBD LOOP ARTERIAL PROJECT AREA, PHASE II INVESTIGATION.
- VOLUME IV. DES MOINES COMMUNITY SURVEY: CENTRAL BUSINESS DISTRICT LOOP ARTERIAL PROJECT.

LIST OF TABLES

<u>Table</u>	<u>Text</u>	<u>Page No.</u>
2.1	Fatality Accidents in Des Moines for Years 1980 Through 1986.....	2.9
2.2	Intersection Accidents for Years 1980 Through 1986 in the Project Area.....	2.10
3.1	Building Displacements for Alternatives of the Des Moines CBD Loop Arterial.....	3.49
3.2	Comparison of Alternatives - Costable Factors...	3.50
3.3	Estimated Project Costs for Various Sections of the Project.....	3.51
3.4	Summary of Section 4(f) Impacts of the Major Alternatives Considered.....	3.52
4.1	Population and Housing Data.....	4.13
4.2	Land Use in Des Moines in 1962, 1973 and 1981...	4.13
5.1	Population and Housing Displacement Data for Census Blocks Affected by Proposed Alternatives.....	5.74
5.2	Population Data for Census Tracts Affected by the Project.....	5.75
5.3	Housing Data for Census Tracts Affected by the Project.....	5.76
5.4	Income Data and Poverty Status for Census Tracts Affected by the Project.....	5.77
5.5	Population Data for Census Blocks Affected by the Project.....	5.78
5.6	Housing Data for Census Blocks Affected by the Project.....	5.79
5.7	Comparison of Population and Housing Data for the CBD Loop Impacted Area and the City of Des Moines.....	5.80
5.8	Population and Housing Characteristics by Neighborhood for the Areas Affected by the Project.....	5.80
5.9	Churches Impacted by the CBD Loop Project.....	5.81
5.10	Commercial Displacements of the CBD Loop Project - Preferred Alternative.....	5.82
5.11	Distribution of Property Taxes According to Jurisdiction.....	5.83
5.12	Summary of Property Tax Revenue Losses.....	5.84
5.13	Estimated Public Utility Adjustment Cost.....	5.84
5.14	Estimated Maintenance Costs for the CBD Loop Alternatives.....	5.85
5.15	Annual Road-User Cost.....	5.85
5.16	Annual Accidents and Costs.....	5.85
5.17	Summary of Annual Road-User, Accident and Maintenance Costs.....	5.86



LIST OF TABLES  
(Continued)

<u>Table</u>	<u>Text</u>	<u>Page No.</u>
5.18	Summary of Impacts to Parks and Open Spaces for Preferred Alternative.....	5.86
5.19	Direct Impacts to Key Historic/Architectural Structures by the Alternatives of the CBD Loop Project.....	5.87
5.20	Noise Abatement Criteria/Activity Relationship..	5.88
5.21	Summary of Noise Analysis.....	5.89
5.22	Noise Barrier Summary.....	5.90
5.23	Predicted 1-Hour CO Concentrations (ppm).....	5.91
5.24	Predicted 8-Hour CO Concentrations (ppm).....	5.91
5.25	Projected Fuel Consumption.....	5.92
5.26	Summary of Major Adverse Impacts of CBD Loop Alternatives.....	5.92

APPENDIX

A.1	Average Daily Traffic Volumes.....	A.1
A.2	Geometric Design Criteria for Proposed Roadway..	A.8

## LIST OF FIGURES

### TEXT\*

#### Figure

#### Section 1

- 1.1 Preferred Alternative (Aerial)
- 1.2 Preferred Alternative

#### Section 2

- 2.1 Location of Des Moines Within Iowa
- 2.2 Major Transportation Arteries in the Des Moines Area and Adjacent to the Project Corridor
- 2.3 Major Street Plan (From 1939 Transportation Report)
- 2.4 Preliminary 1980 Major Streets Plan (From 1961 Comprehensive Plan)
- 2.5 1980 Major Streets Plan (From 1980 General Plan, 1963 Updated)
- 2.6 Year 2000 Street and Highway Plan for the Des Moines Urbanized Area
- 2.7 Existing Traffic Flow Movements
- 2.8 Existing Levels of Service
- 2.9 Levels of Service Characteristics
- 2.10 Accident Location Map for the Project Area During 1986

#### Section 3

- 3.1 Alternative A With Interchange Subalternative 1A
- 3.2 Alternative A With Intersection Subalternative 2A
- 3.3 Alternative B With Interchange Subalternative 1B
- 3.4 Alternative B With Intersection Subalternative 2B
- 3.5 Railroad Relocations That Would be Required by the CBD Loop Project
- 3.6 Future Street Improvement Projects
- 3.7 Alternatives Considered, Partially Evaluated and Deleted From Further Consideration
- 3.8 Street Widening Alternative SW-1
- 3.9 Street Widening Alternative SW-2
- 3.10 Street Widening Alternative SW-3
- 3.11 Alternatives Considered After the Draft EIS
- 3.12 Alternative Layouts of Interchange at Junction of N-S and E-W Segments

---

\*Figures are located at the end of each section.

LIST OF FIGURES  
(CONTINUED)

TEXT\*

Figure

Section 4

- 4.1 Topographic Map of the Project Area
- 4.2 Churches, Schools and Census Tracts in the Project Area
- 4.3 Neighborhoods and Target Areas in the Project Area
- 4.4 Parks and Open Spaces in the Des Moines Area
- 4.5 Major Community Facilities and Historical Districts Within the Project Area
- 4.6 Existing Land Use in Des Moines
- 4.7 Existing Land Use in the Project Area
- 4.8 Proposed 1990/2000 Land Use Plan for the Project Area

Section 5

- 5.1 Callanan, Downtown and Hiatt Neighborhoods (Adapted From 1990/2000 Land Use Plan, Des Moines Plan and Zoning Commission, July, 1978)
- 5.2 Brody, Weeks and Willard Neighborhoods (Adapted From 1990/2000 Land Use Plan, Des Moines Plan and Zoning Commission, July, 1978)
- 5.3 Common Indoor and Outdoor Noise Levels (Adapted From Bolt Beranek and Newman, Inc., Fundamentals and Abatement of Highway Traffic Noise, 1973)
- 5.4 Aerial Map With Air Quality Modeling Sites and Noise Measurement Sites
- 5.5 Effect of Traffic Noise Level on Ordinary Outdoor Activity
- 5.6 Flood Plain Mapping of the Project Corridor, Western Area
- 5.7 Flood Plain Mapping of the Project Corridor, Eastern Area
- 5.8 Preliminary Interchange Layout of the Preferred Alternative CBD Loop in the Des Moines Water Works
- 5.9 Aerial Map of the Project Corridor Depicting Aesthetic Considerations

Appendix A

- A.1 Locations for Average Daily Traffic Volumes in the Project Area
- A.2 Index Map for Traffic Volumes Tabulated in Table A.1

---

\*Figures are located at the end of each section.



LIST OF FIGURES  
(CONTINUED)

Plates

Appendix C

1-12 Aerial Photographs of the Preferred Alternative

Appendix D

1-13 Aerial Photographs of the Alternatives Evaluated and Deleted

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\*Figures are located at the end of each section.

Rep/Dm2/AA1

FINAL ENVIRONMENTAL STATEMENT  
CBD LOOP ARTERIAL IN  
DES MOINES, POLK COUNTY, IOWA

SECTION 1

SUMMARY OF STATEMENT

DESCRIPTION OF ACTION

This project pertains to the construction of a four- to six-lane divided highway. The project has two major segments, a north-south segment and an east-west segment (Figures 1.1 and 1.2). The north-south segment would begin at the existing Harding Road and 19th Street overpasses of Interstate 235 and extend along the Harding Road corridor to Fleur Drive (approximately 1.5 miles). The east-west segment would intersect with the north-south segment near the Raccoon River and proceed to the east along the existing corridors of Market Street, Elm Street, Raccoon Street and Scott Avenue (approximately 2.9 miles) to the end of the project in the vicinity of S.E. 14th Street (U.S. Highways 65 and 69). The project also includes connections to Fleur Drive, 15th Street, Indianola Avenue and E. 15th Street.

ACTIONS REQUIRED BY OTHER FEDERAL AGENCIES

Section 404 Permits from the U.S. Army Corps of Engineers will be required for three crossings of the Raccoon River, one crossing of the Des Moines River and one crossing of a wetland. A Memorandum of Agreement regarding impacts to cultural resources has been signed by the Advisory Council on Historic Preservation. A Section 6(f) transfer approval will be required from the Department of Interior.

ALTERNATIVES

Three major alternatives in addition to the No Action alternative were considered. These alternatives are very similar throughout the majority of the alignment. However, they differ considerably in a .6 mile segment. This segment is located in the western part of the project near the junction of the north-south segment and the east-west segment. In this area, Alternative A proceeds along a northerly route and passes through a commercial district. Alternative B proceeds along a southerly route which passes through vacant land and the flood plain of the Raccoon River. The preferred alternative is similar to Alternative B but would pass further to the south in the flood plain of the Raccoon River.



Two of these alternatives have a subalternative variation at the intersection with Ingersoll Avenue. Subalternatives 1A and 1B would have an interchange at this point, while Subalternatives 2A and 2B would have an intersection. The preferred alternative would have an intersection at Ingersoll Avenue.

#### PROBABLE ENVIRONMENTAL IMPACTS

Major environmental impacts which would result from the preferred alternative of this project include:

- The displacement of 466 people.
- The displacement of 84 residential structures that contain 181 housing units.
- The displacement of five churches.
- The displacement of 42 businesses and seven warehouses, employing an estimated 800 persons.
- The displacement of two structures considered eligible for the National Register of Historic Places and 23 structures that contribute to the significance of a National Register Historic District.
- The taking of small amounts of land from two publically owned parks, three publically owned river front open space areas, and one publically owned, multi-use area.
- Increased noise levels and highway related air pollution near the project.
- Intrusion upon the facilities and water storage areas of the Des Moines Water Works.
- Noise, air pollution, street closures and utility disruptions during construction.

Benefits to be derived from the project include:

- Would reduce traffic congestion on many streets in the central city area.
- Would reduce traffic accidents.
- Would result in savings in travel time and fuel consumption.
- Would improve accessibility within many parts of the central city area.
- Would facilitate city land-use planning that is aimed at revitalizing the industrial and commercial areas of the central city.
- Would support ongoing revitalization of the CBD by providing a southern bypass around the downtown area.

#### AREAS OF CONTROVERSY

Areas of controversy and public concerns that were expressed during the development of the project have included: impacts to

the Sherman Hill Historic District; displacement of residents; air quality and noise impacts to residential areas; impacts to established neighborhoods; displacement of churches; displacement of businesses; impacts to park and recreation areas; at-grade rail-highway crossings; impacts to archaeological resources; impacts to a wetland area; impacts to school pedestrian safety; impacts to water quality; impacts to the Des Moines Water Works; and proximity to a hazardous waste site.

#### REVIEWING AGENCIES

During the planning and coordination of this project, these issues have been resolved. No significant unresolved issues remain.

A copy of this Draft Environmental Statement was sent to the following agencies and individuals in May, 1983, for review and comment.

#### Federal Agencies:

- Advisory Council on Historic Preservation
- Army Corps of Engineers
- Coast Guard National Trust for Historic Preservation
- Department of Energy
- Department of Housing and Urban Development
- Department of Agriculture
- Department of Interior
- Department of Health and Human Services
- Environmental Protection Agency
- Federal Highway Administration
- Federal Aviation Administration
- Federal Emergency Management Agency
- Federal Railroad Administration
- Urban Mass Transit Administration

#### State Agencies:

- Office of Planning and Programming, which sends to:
  - Iowa Development Commission
  - Iowa Department of Soil Conservation
  - Iowa Conservation Commission (now part of Iowa Department of Natural Resources (IDNR))
  - Iowa Natural Resources Council (now part of IDNR)
  - Iowa Department of Environmental Quality (now part of IDNR)
  - Iowa State Historical Society
  - State Historic Preservation Officer
  - Office of State Archaeologist
  - Iowa Department of Agriculture
  - Iowa Arts Council
- Iowa Geological Survey (now part of IDNR)
- State Capitol Planning Commission



Local Agencies:

Mayor of Des Moines  
Des Moines Public Works Director  
Des Moines City Council  
Des Moines Water Works  
Des Moines School Board  
Des Moines Metropolitan Transit Authority  
Polk County Board of Supervisors  
Polk County Conservation Commission  
Polk County Engineer  
Polk County Physical Planning Department  
CIRALG Regional Planning Commission  
Woodland-Willkie Neighborhood Priority Board  
Southeast Neighborhood Priority Board  
Pioneer-Columbus Neighborhood Priority Board

Private Organizations:

Community Action Research Group  
Polk County Historical Society  
Willkie House  
Spanish Speaking People's Commission  
Native American Project on Alcoholism  
Gateway Opportunity Center  
Proteus  
Sherman Hill Neighborhood Association, Inc.  
Chamber of Commerce of Greater Des Moines  
Iowa Confederation of Environmental Organizations  
ACORN  
Citizens for Community Improvement  
OEDP  
National Association for the Advancement of Colored People

The Draft Environmental Impact Statement was made available to the U.S. Environmental Protection Agency on May 6, 1983. The Location Public Hearing was held on June 30, 1983. Subsequent to the public hearing, the project underwent further study of alternatives that would greater utilize the existing street system. However, the studies together with public involvement determined that a lesser type facility than those shown in the Draft EIS would not provide the required transportation service. An alternative presented in the Draft EIS was designated as the preferred alternative and more extensive archaeological survey was performed on this location to identify, to the extent possible, sites that required coordination with ACHP. Based on these data and a reevaluation in accordance with 23 CFR 771.129(c)(1), a Draft 4(f) Statement was made available to the U.S. Department of Interior and other agencies on December 19, 1986. The Final Environmental Impact Statement and Final Section 4(f) Statement was made available to the U.S. Environmental Protection Agency and the U.S. Department of Interior on DEC 28 1987, 1987.

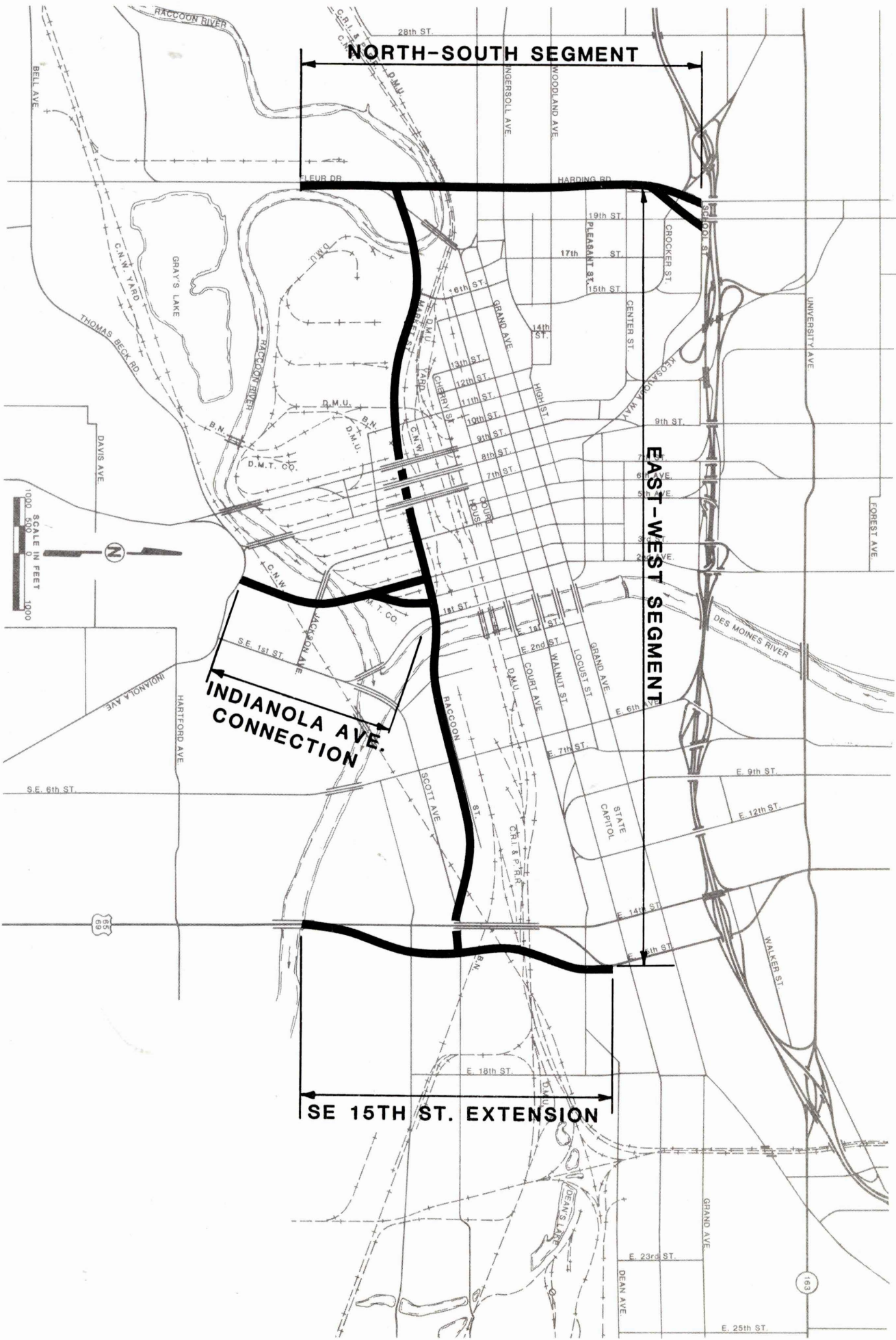
Rep/Dm2/AA2





**FIGURE 1.1 PREFERRED ALTERNATIVE**





**FIGURE 1.2 PREFERRED ALTERNATIVE**

**NORTH-SOUTH SEGMENT**

**EAST-WEST SEGMENT**

**INDIANOLA AVE. CONNECTION**

**SE 15TH ST. EXTENSION**

SCALE IN FEET  
1000 500 0 1000



## SECTION 2

### PURPOSE OF AND NEED FOR ACTION

#### LOCATION AND DESCRIPTION OF THE PROPOSED ACTION

The city of Des Moines, the capital of the state of Iowa, is located in south-central Iowa, as shown in Figure 2.1. The corridor of the proposed action and its relationship to the existing major transportation network is indicated in Figure 2.2

This project consists of the construction of a four- to six-lane divided highway. The project has two major segments, a north-south segment and an east-west segment. The north-south segment would begin at the existing Harding Road and 19th Street overpasses of Interstate 235 and extend along the Harding Road corridor (approximately 1.5 miles). The east-west segment would intersect with the north-south segment near the Raccoon River and proceed to the east along the existing corridors of Market Street, Elm Street, Raccoon Street and Scott Avenue (approximately 2.9 miles) to the end of the project in the vicinity of S.E. 14th Street (U.S. Highways 65 and 69). The project also includes connections to Fleur Drive, 15th Street, Indianola Avenue and E. 15th Street.

#### METROPOLITAN TRANSPORTATION PLANNING

Segments of the proposed action have been part of the transportation plan for the city of Des Moines for a number of years. Planning reports which have included segments of this alignment are: "Major Street Report," for the City Plan and Zoning Commission, Des Moines, Iowa, by Harland Bartholomew and Associates, December, 1939; "Comprehensive Plan," Des Moines City Plan and Zoning Commission, November, 1961; "1980 General Plan," Des Moines City Plan and Zoning Commission, 1963; and "Year 2000 Street and Highway Plan for the Des Moines Urbanized Area," Des Moines Area Transportation Planning Committee, 1984. The general corridor for the highway is also recognized in the 2000 Land Use Plan, Des Moines City Plan and Zoning Commission, April, 1987. Figures 2.3, 2.4 and 2.5 from the 1939, 1961 and 1963 reports, respectively, indicate earlier provisions for the proposed action. The "Revised Initial 1990 Des Moines Urbanized Area Transportation Plan," Central Iowa Regional Association of Local Governments (CIRALG), May, 1974, also contained the proposed project.

The current transportation plan was adopted by the Des Moines Area Transportation Planning Committee in 1984 and includes the proposed action and its major connections to existing streets (Figure 2.6).



## PURPOSE OF THE PROPOSED ACTION

One purpose of the proposed action is to carry east-west through traffic around, rather than through, the central business district (CBD) of the city, thus reducing traffic congestion and conflicts with pedestrians and vehicles needing access to this area. The project is also needed to provide improved accessibility to the Des Moines Airport from Interstate 235 and other areas of the city. It will also improve traffic flow between the downtown areas and the rapidly developing southeastern parts of the city. The project will also relieve several major areas of traffic congestion: at the intersection of Fleur Drive and Locust Street; at the intersection of S.E. 14th Street and Maury Street; and along S.E. 14th Street.

Another purpose of the proposed action is to provide better traffic service and access to the central city industrial areas. These areas include: the area immediately south of the central business district on the east side of the Des Moines River, extending to Raccoon Street; the area south and southwest of the central business district on the west side of the Des Moines River and extending to the Raccoon River; and the area east of S.E. 14th Street.

## NEED FOR THE PROPOSED ACTION

### Traffic Congestion

On-site investigations conducted in 1982 in the project corridor indicated that existing traffic levels of service vary from Level D to Level F (see Figure 2.8). Figure 2.9 illustrates the degree of traffic congestion for Level of Service Indices A to F. Urban transportation facilities are normally designed to operate at Level C or better, while streets operating at Level D or lower are considered deficient. The roadways indicated in Figure 2.8 are currently operating at Levels of Service D, E or F and are considered inadequate for the existing traffic volumes under current conditions of street widths, parking and traffic control measures.

Current average daily traffic volumes are presented in Table A-1 of Appendix A for numerous locations in the city (Figures A-1 and A-2, Appendix A). Projected average daily traffic volumes for the year 2000 are also indicated in Table A-1 for each of the various alternatives, including the No Action (or status quo) alternative. These alternatives are described in Section 3 of this report.

Existing roadways are currently congested in several areas of the city in the vicinity of the proposed action. These are described in the following paragraphs.



## North-South Corridor

One area of congestion includes Harding Road and 19th Street from Interstate 235 to Center Street; Harding Road from Center Street to Ingersoll Avenue; and 18th Street, 19th Street and Grand Avenue from Ingersoll Avenue to Fleur Drive at the Raccoon River. Included is an area near the Des Moines Technical High School in the vicinity of Fleur Drive, Locust Street, Grand Avenue, 18th Street and 19th Street. Southbound traffic on Harding Road is primarily traveling to the Des Moines Airport or other locations on Fleur Drive, to the central business district or to points east or south of the CBD. This traffic currently travels south along a one-way segment of Harding Road to Center Street, then via a two-way segment of Harding Road to Ingersoll Avenue, then east along two-way Ingersoll Avenue, then south on one-way 19th Street and then east on two-way Grand Avenue to 18th Street at which point southbound Fleur Drive traffic turns south and eastbound traffic proceeds east via Locust Street and other streets in the CBD. Figure 2.7 indicates these traffic movements from southbound Harding Road that are destined to Fleur Drive, the CBD and areas east of the CBD, including S.E. 14th Street. It likewise indicates the return routings for such traffic. Northbound traffic from Fleur Drive and 18th Street turns left at Grand Avenue and must cross Grand Avenue to get into the northerly lane to turn right onto 18th Street, then travels north to Ingersoll Avenue and then travels north on Harding Road to Center Street. It then proceeds east along a one-way segment of Center Street to 19th Street and then turns north onto a one-way segment of 19th Street. A short radius curve at Harding Road and an even shorter radius curve at 19th Street reduces traffic speeds and increases congestion for such northbound traffic.

Harding Road is currently a 36-foot wide, undivided, three-lane pavement between Center Street and High Street, with two southbound lanes and one northbound lane. Between High Street and Ingersoll Avenue, a 50-foot wide, undivided, four-lane, two-way pavement exists. This existing roadway currently operates near its traffic-carrying capacity, with a Level of Service in the range of Levels E and F (see Figure 2.8) as does Center Street, while 19th Street north of Center Street operates at Level D. Future traffic volumes are expected to be higher than existing volumes, thereby resulting in even greater congestion and over-capacity conditions.

Traffic congestion is particularly acute on streets in the vicinity of the Des Moines Technical School. These streets are currently operating at Levels of Service E or F which reflects the combination of poor traffic circulation patterns, heavy traffic volumes, closely spaced, traffic signal controlled intersections, two-lane left- and right-turning movements and relatively



narrow street pavements. Existing traffic volumes generally exceed the capacities of the existing street system in this area. Forecasted increases in traffic in this area will likewise result in poorer operating conditions.

### East-West Corridor

The east-west traffic movements between the north-south corridor on the west and S.E. 14th Street on the east and between Interstate 235 and the Raccoon River are currently accommodated by Grand Avenue, Locust Street, Walnut Street and the Mulberry Street/Court Avenue combination. All of these streets pass through the Central Business District of downtown Des Moines and adjacent to the State Capital Complex east of the Des Moines River. Current levels of service are low in the CBD area, ranging from Level D to Level F (see Figure 2.8). Congested traffic conditions exist within the CBD due to both heavy vehicular and pedestrian traffic. The CBD is an active retail and business center which is continually undergoing development, and future plans for this area call for increased business and residential development in these areas, with an emphasis on pedestrian usage. The proposed CBD Loop will reduce the through traffic on many of the east-west streets in the CBD and thus improve pedestrian usage.

An industrial area of current and projected growth is located south of the CBD, west of the Des Moines River and north of the Raccoon River. This areas access to east-west streets in this corridor also increases traffic congestion.

### Indianola Avenue - CBD Connection Corridor

Indianola Avenue is a major transportation artery connecting from the southeast areas of Des Moines to south of the CBD. Several streets, including S.W. Seventh Street, S.E. First Street, S.E. Sixth Street and S.E. 14th Street connect to various areas of the CBD and State Capitol Complex from Indianola Avenue. An area of traffic congestion currently exists in the vicinities of intersections with S.W. Seventh and S.E. First Streets. The level of service in these areas currently ranges from Level E to Level F (see Figure 2.8). Both S.W. Seventh and S.E. First Street include two-lane, two-way streets which currently operate at or near their respective traffic capacities, carrying nearly 12,000 vehicles per day each.

The Indianola Avenue Connection is predicted to reduce traffic volumes on S.W. Seventh Street, S.E. First Street and that part of S.W. First Street that lies north of the Raccoon River. This should greatly alleviate the traffic congestion in the vicinity of Indianola Avenue and improve traffic flow between the CBD and the rapidly developing southeast areas of the city.



## E. 14th/E. 15th Street-S.E. 14th Street Corridor

The southbound one-way segment of E. 14th Street provides two through lanes of traffic from Court Avenue south to its joining with the divided four-lane segment of E. 14th Street/S.E. 14th Street north of the railroad area. Northbound traffic departs from this divided four-lane roadway north of the railroad, curving northeasterly to a tie-in with E. 15th Street. The divided four-lane roadway continues south from the junction of the two one-way roadways, overpasses the railroad area and proceeds south to Railroad Avenue along S.E. 14th Street, then continues south as a four-lane undivided roadway. This roadway currently operates in the ranges of Levels of Service E to F (see Figure 2.8). The two-way portion of this roadway currently carries approximately 31,000 to 35,000 vehicles per day of traffic, while the one-way segments each carry approximately 50 percent of the two-way traffic volumes. These roadways are currently operating at or beyond their practical capacities and cannot be expected to accommodate future traffic loadings.

The proposed splitting of portions of E. 14th and S.E. 14th Streets into two one-way roadways, via the extension of E. 15th Street, within the project area from the Des Moines River to E. Court Avenue will reduce traffic congestion along S.E. 14th Street at the intersection of S.E. 14th and Maury Streets. The intersection has been the scene of 67 accidents in the three-year period of 1979 through 1981, and more accidents can be expected, with increases in traffic volumes, if no improvements are made in this area.

The proposed splitting of portions of E. 14th and S.E. 14th Streets into two, one-way roadways, via the extension of E. 15th Street, from the Des Moines River to E. Court Avenue will reduce traffic congestion on S.E. 14th Street at the intersection of S.E. 14th and Maury Streets. The intersection has been the scene of 172 accidents in the eight-year period of 1979 through 1986, and more accidents can be expected, with increases in traffic volumes, if no improvements are made in this area.

### Community Planning

Traffic projections for the various alternatives of the proposed action were based on various elements of community planning, including land-use trends, anticipated employment factors, economic development forecasts for commercial and industrial areas and public facilities needs. Input from the surrounding communities, represented in the metropolitan planning organization, Central Iowa Regional Association of Local Governments (no longer in existence) and the Des Moines Area Transportation Planning Committee was also considered.



The CBD is currently undergoing extensive changes through redevelopment projects, supported by both public and private funds. The heaviest recent redevelopment has been within an area generally bounded by Keosauqua Way, Ninth Street, Mulberry Street, Court Avenue and Second Street to the west of the Des Moines River. Redevelopment projects have included demolition of buildings and construction of a new hotel, civic center, office buildings, a senior citizens' residence, a rental housing complex, parking ramps and a network of second-story skywalks interconnecting 19 city blocks (refer to Figure 4.5 in Section 4 for locations).

There has also been some recent redevelopment of the downtown area east of the Des Moines River. This area extends from the Des Moines River to the state capitol grounds between Court Avenue and Des Moines Street. The long-range planning for this area calls for considerable redevelopment. The future plans include development of a high-density residential area adjacent to the river, increased commercial development and controlled industrial development. A new state historical building is currently under construction in this area.

Two other areas, west and south of the core area of the CBD, have been proposed for redevelopment. The western area is bounded by Eighth Street on the east, High Street and Ingersoll Avenue on the north, 19th Street on the west, and a combination of Grand Avenue, 18th Street and the Des Moines Union Railway Company on the south. This area is partially commercial and industrial at present, although the future land use is proposed to be primarily general commercial, with some areas of office and retail and a three-block core area of intense office and retail. The southern area is bounded by Mulberry Street on the north, the Raccoon River on the south, the Des Moines River on the east and Fleur Drive on the west. This area is industrial at present; but due to problems of access, railroad crossings and flooding, it is under-utilized. The CBD Loop project is expected to greatly facilitate the redevelopment of this area.

The proposed action is needed to serve as a bypass of the CBD in order to reduce existing congestion and to be consistent with future plans for this area.

#### Traffic Accidents

Tables 2.1 and 2.2 present data on accidents and fatalities between 1980 and 1986. Figure 2.10 indicates the locations of intersections in the project area where ten or more accidents occurred in 1986. This data indicates that numerous accidents occurred in the following areas:



1. Corridor of Harding Road-19th Street-18th Street-Fleur Drive from I-235 to the Fleur Drive bridge over the Raccoon River.
2. The CBD west of the Des Moines River between Grand Avenue and Court Avenue.
3. E. 14th Street-E. 15th Street and S.E. 14th Street corridor from I-235 to Hartford Avenue.

The total numbers of accidents for the years 1980 to 1986 were 7,803, 6,659, 6,260, 6,657, 6,784, 7,222 and 6,885, respectively. These figures do not include accidents in parking lots or on private properties.

The number of fatalities and types of accidents in which they occurred during these seven years are presented in Table 2.1. Several of these fatalities occurred within the project corridor. A motorcycle driver was killed at the intersection of E. Court Avenue and Johnson Court in 1980. In 1981, one automobile driver was killed at the intersection of Indianola Avenue and Hillside Avenue. In 1982, one automobile driver was killed in the southbound lane of the Fleur Drive bridge. In 1983, an automobile driver and passenger were killed on Johnson Court south of Court Avenue and an automobile passenger was killed in the 700 block of Harding Road. In 1984, an automobile driver was killed on S.W. First Street by Sec Taylor Stadium. In 1986, an automobile driver and passenger were killed on the S.E. 14th Street viaduct.

No details are available regarding individual accidents; and therefore, no specific conclusions can be made regarding accident causes. Data also excludes personal injury statistics. However, the accident data indicates that the E. 14th Street-E. 15th Street-S.E. 14th Street corridor has been the scene of numerous accidents. When this data is considered in combination with the existing and projected high traffic volumes in this area, the necessity for some type of roadway improvement is apparent. The proposed action includes improvement of portions of E. 14th and E. 15th Streets and S.E. 14th Street and the extension of E. 15th Street. These improvements are expected to improve safety by separating northbound and southbound traffic onto separate roadways and will be particularly beneficial in reducing traffic congestion via separate intersections at Maury Street.

The proposed action will relieve traffic congestion in the Harding Road-19th Street-18th Street-Fleur Drive area and thus improve safety. Through traffic will also be allowed to bypass the CBD via the proposed action, thus reducing traffic volumes in the CBD and reducing potential conflicts between vehicular and pedestrian traffic.



## Interface of Proposed Action With Air, Rail and Transit Facilities

Certain alternatives of the proposed action will provide improved access to industrial areas south of the CBD. Many existing industries in this area are highly dependent on highway transportation and are also served by railroad trackage. New automobiles are currently transported via railroads and are unloaded, stored and then delivered via highways to metropolitan automobile dealers. This facility is located approximately one-fourth mile south of Market Street and west of the Des Moines Union Railway Company's Slimmy Yard (approximately 0.3 mile west of S.W. Ninth Street). Other industries including lumber yards, beverage distributors and grocery warehouses also receive materials or goods via railroads and distribute via the highway system.

The Des Moines Metropolitan Transit Authority (MTA) operates from a 6.5-acre complex located at 1100 MTA Lane, which is approximately 0.4 mile south of Market Street and one-eighth mile west of S.W. Ninth Street. This city-owned and operated facility includes a garage storage area, administration and maintenance areas, and employee parking area. The MTA operates two Monday through Friday bus routes and nine Monday through Saturday routes, in addition to Saturday and Sunday Cultural Circuit route. The proximity of the MTA complex to the proposed action is expected to enhance its operations. Projected traffic volumes indicated in Appendix A, Table A-1, for the various alternatives include transit system traffic.

The Des Moines Municipal Airport is located west of Fleur Drive between Army Post Road and McKinley Avenue (see Figure 2.2). Fleur Drive serves as the principal route from the airport to the center and northern half of the community. The proposed action will connect to Fleur Drive approximately 2.9 miles north of the airport entrance and will provide improved accessibility from that point to the northern, western and eastern areas of the community, including the CBD and adjacent industrial areas.

Tran/Dm2/AA3

TABLE 2.1

FATALITY ACCIDENTS IN DES MOINES FOR YEARS 1980 THROUGH 1986

Type of Accident	Number of Fatalities						
	1980	1981	1982	1983	1984	1985	1986
Driver, Motorcycle or Moped.	4	5	--	--	--	4	4
Driver, Automobile.	14	11	10	8	10	4	5
Passenger, Motorcycle.	2	--	--	--	--	--	--
Passenger, Automobile.	6	4	--	7	1	3	4
Pedestrian.	6	3	2	4	4	3	2
Bicycle.	1	1	--	--	2	--	--
<b>TOTAL FATALITIES</b>	<b>33</b>	<b>24</b>	<b>12</b>	<b>19</b>	<b>17</b>	<b>14</b>	<b>15</b>

--None reported.

Rep/Dm2/AD3-1



TABLE 2.2

INTERSECTION ACCIDENTS  
FOR YEARS 1980 THROUGH 1986  
IN THE PROJECT AREA

Intersection		Number of Accidents						
Street	Street	1980	1981	1982	1983	1984	1985	1986
<u>Harding Road-19th Street-18th Street-Fleur Drive Corridor</u>								
I-235	Cottage Grove	--	11	--	--	17	--	--
I-235	Harding Road	--	--	--	--	--	--	--
Cottage Grove	Harding Road	26	12	16	10	12	18	17
Cottage Grove	Crocker/19th Street	13	--	--	--	--	--	--
Harding Road	Woodland Avenue	10	--	--	--	--	--	12
Ingersoll Avenue	Harding Road	11	--	--	13	--	--	--
Grand Avenue	19th Street	15	--	13	13	16	13	--
Fleur Drive	Grand/Locust Street	25	20	19	15	16	17	19
<u>Central Business District and Vicinity</u>								
Grand Avenue	17th Street	11	10	--	--	--	13	27
Grand Avenue	13th Street	--	--	--	--	--	--	--
Grand Avenue	12th Street	12	--	--	--	--	--	--
Grand Avenue	10th Street	16	12	--	--	17	11	14
Grand Avenue	Ninth Street	19	13	--	10	12	16	11
Grand Avenue	Eighth Street	15	13	11	--	12	15	16
Grand Avenue	Seventh Street	12	14	--	13	16	12	12
Grand Avenue	Fifth Street	--	10	--	--	--	--	--
Grand Avenue	Third Street	12	--	--	--	--	--	--
Grand Avenue	Second Avenue	17	--	13	21	18	20	19
Grand Avenue	Sixth Avenue	--	--	13	21	13	25	26
Grand Avenue	E. Sixth Street	17	10	12	11	12	11	15
Grand Avenue	E. Ninth Street	--	12	--	--	--	11	--
Grand Avenue	E. 12th Street	--	--	--	10	--	11	--
Locust Street	13th Street	11	12	--	--	--	12	10
Locust Street	11th Street	12	--	--	--	--	10	--
Locust Street	10th Street	--	14	--	--	10	--	--
Locust Street	Ninth Street	18	20	11	17	18	19	18
Locust Street	Eighth Street	--	--	--	--	--	10	15
Locust Street	Seventh Street	--	10	12	14	11	18	19
Locust Street	Sixth Avenue	--	16	10	--	--	25	16
Locust Street	Fifth Street	12	--	--	--	--	--	--
Locust Street	Third Street	18	--	10	--	13	--	15
Locust Street	15th Street	--	--	--	--	10	--	--
Locust Street	12th Street	--	--	--	10	--	11	--
Locust Street	Second Avenue	10	11	--	16	--	--	10
Walnut Street	Ninth Street	--	10	--	--	--	--	--
Walnut Street	Eighth Street	11	--	--	--	11	--	--
Walnut Street	Seventh Street	--	--	--	--	12	14	--
Walnut Street	Sixth Avenue	--	--	11	--	--	--	--
Walnut Street	Second Avenue	--	--	--	10	12	--	--
Mulberry Street	Ninth Street	13	--	--	--	--	13	11
Mulberry Street	Eighth Street	16	14	12	--	11	--	13
Mulberry Street	Seventh Street	12	--	--	--	--	--	--
Mulberry Street	Sixth Avenue	10	--	--	--	--	--	--
Court Avenue	Second Avenue	--	11	--	--	--	--	--
Court Avenue	Riverside/First Street	--	16	--	--	--	--	14
S.W. Seventh Street	Clifton/Indianola Avenue	10	--	--	--	--	--	--
<u>E. 14th Street-E. 15th Street-S.E. 14th Street Corridor</u>								
Grand Avenue	E. 14th Street	38	29	33	23	26	25	25
Grand Avenue	E. 15th Street	35	31	22	22	39	34	39
Walnut Street	E. 14th Street	17	--	--	--	--	14	--
Walnut Street	E. 15th Street	21	19	13	19	--	12	24
E. Court Avenue	E. 14th Street	--	19	20	22	18	31	18
E. Court Avenue	Johnson Court/15th Street	--	--	12	16	22	18	12
S.E. 14th Street	Maury Street	19	16	12	24	21	28	20
S.E. 14th Street	Railroad Street	--	--	10	16	--	12	21

-- = Indicates Less Than 10 Accidents; Number Not Reported or Known



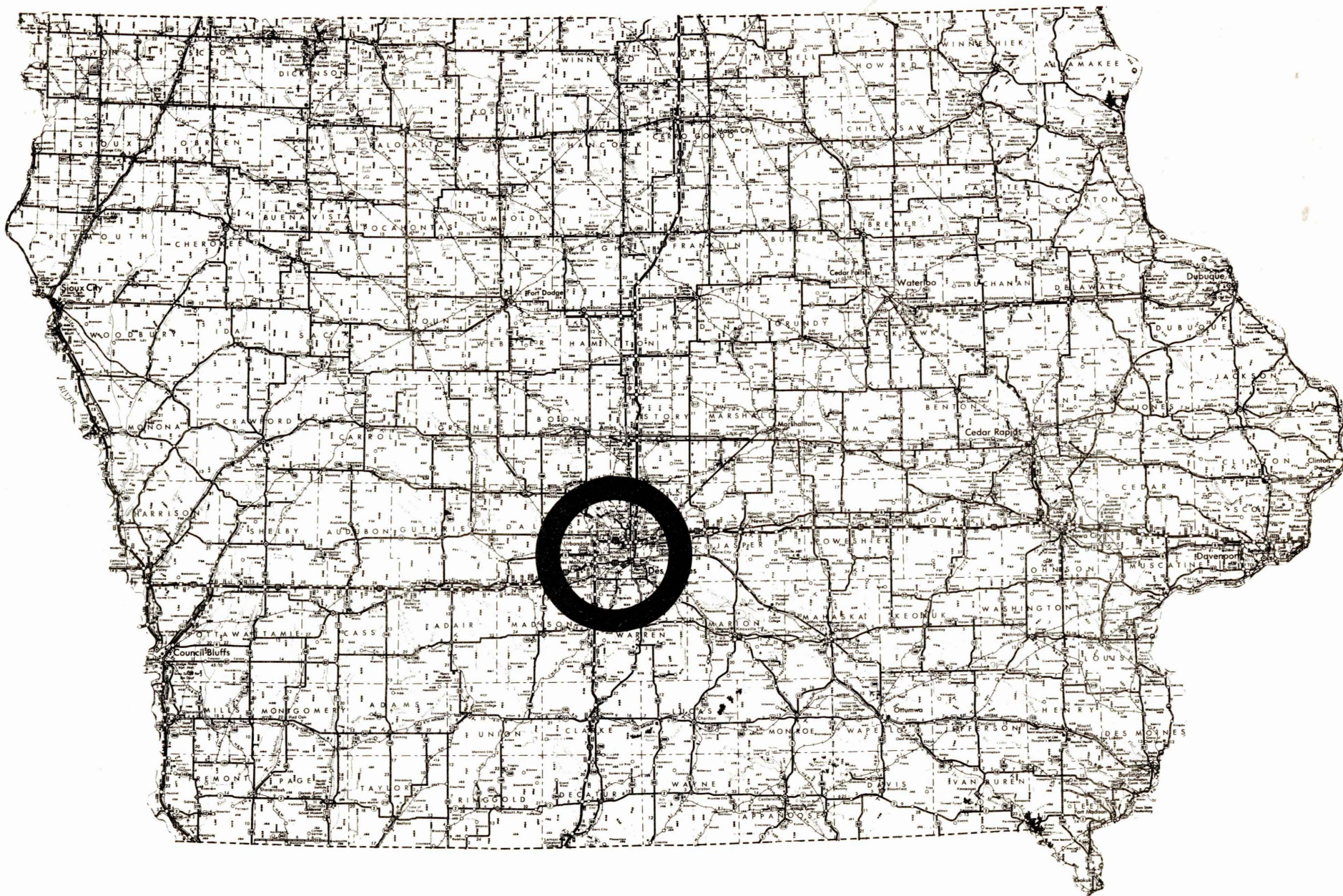


FIGURE 2.1 LOCATION OF DES MOINES WITHIN IOWA



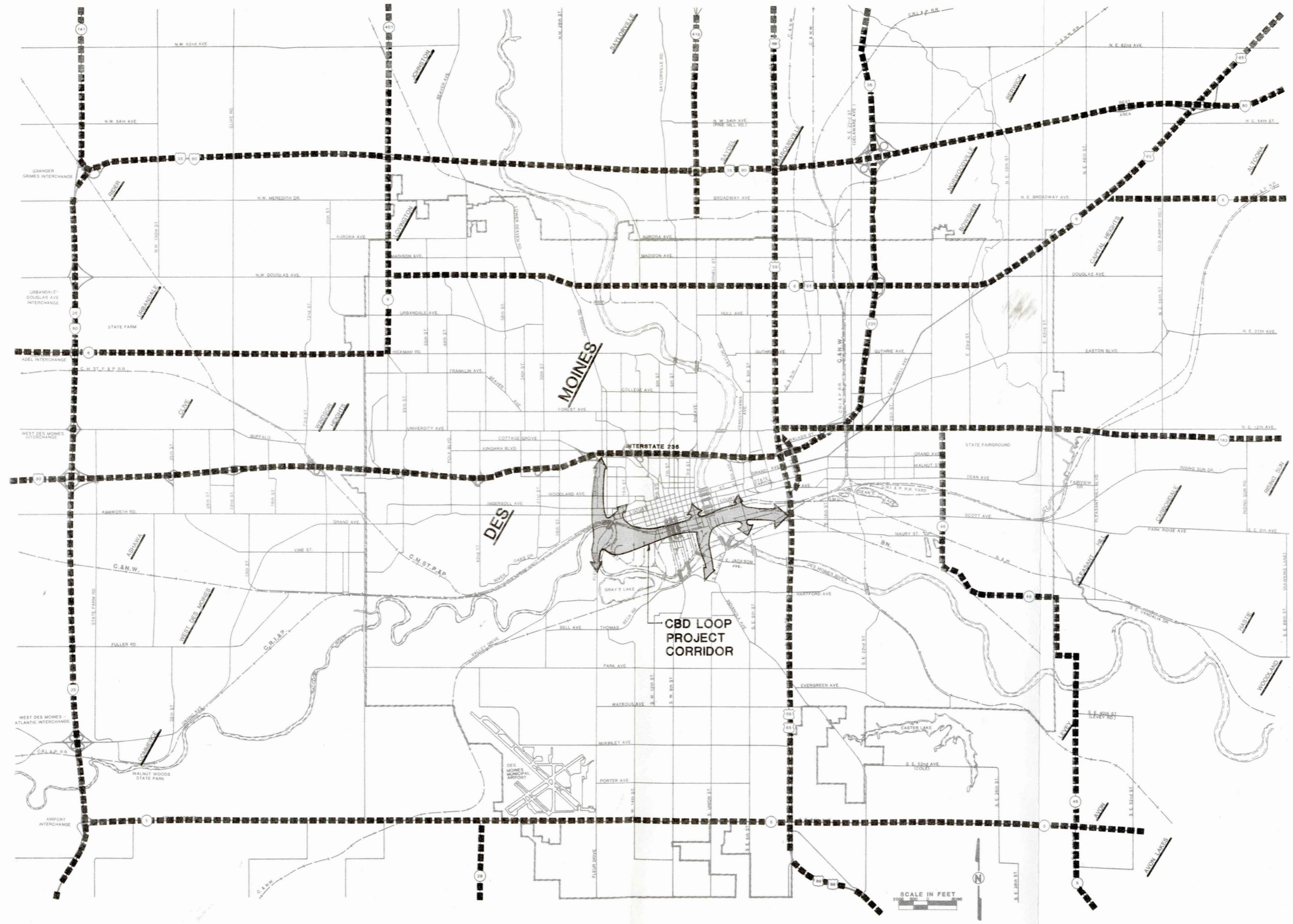


FIGURE 2.2 MAJOR TRANSPORTION ARTERIES IN THE DES MOINES AREA & ADJACENT TO THE PROJECT CORRIDOR

At-grade intersections are provided along the proposed Indianola Avenue connection at a S.W. Second Street-Jackson Avenue connection, the Chicago & North Western Transportation Company track, Dunham Street and Indianola Avenue.

Indianola Avenue is proposed to be reconstructed as a four-lane, divided roadway in the vicinity of its intersection with the Indianola Avenue connection. It is proposed that transition sections be provided to tie back into existing paving both east and west of the widened section, connecting east of S.W. Seventh Street and west of South Union Street. A median varying from four feet to 28 feet in width is proposed.

Right-of-way requirements are summarized in Table 3.1 for this roadway. Included are buildings north of the Raccoon River used by the city of Des Moines Street Department, properties south of the river and along the west side of S.W. First Street and properties along Indianola Avenue in the vicinity of S.W. First and S.W. Second Streets.

#### E. 15th Street Extension

The E. 15th Street Extension is indicated on Plates 11 and 12, Appendix C. This new multilane, one-way street begins north of E. Court Avenue at existing E. 15th Street as a four-lane pavement. It then proceeds to the southwest, intersects with E. Court Avenue and E. Vine Street, crosses E. Vine Street about midway between S.E. 15th Street and Johnson Court, narrows to a three-lane roadway, then curves southward, overpasses approximately 14 railroad tracks belonging to numerous railroad companies, then overpasses the railroad track belonging to Burlington Northern, Inc., and the one-story portion of a building north of Scott Avenue. It then proceeds south to overpass the east-west segment of the CBD Loop Arterial that occupies the Scott Avenue corridor, descends in grade to an at-grade intersection with Maury Street, curves to the southwest and south to tie into the east half of the S.E. 14th Street Des Moines River bridge.

As part of this north-south link, S.E. 14th Street south of E. Vine Street is converted from a two-way, divided roadway (U.S. Highways 65 and 69) to a one-way southbound roadway. The existing diagonal roadway that begins at S.E. 14th Street and E. Vine Street and proceeds to the northeast to connect to E. 15th Street north of E. Court Avenue is proposed to be removed. The median of S.E. 14th Street is to be modified near E. Vine Street, and S.E. 14th Street is to be modified between Scott Avenue and the Des Moines River bridge. An at-grade intersection is provided at Maury Street.



The extension of E. 15th Street will require additional right-of-way from north of E. Court Avenue to the north end of the Des Moines River bridge on S.E. 14th Street. Right-of-way requirements are summarized in Table 3.1. In addition, rights-of-way for crossing of numerous railroad tracks and the aerial crossing of the industrial property and building north of Scott Avenue will be required. This street extension and its interchange ramps will require the acquisition of four churches, one parsonage, and commercial and residential properties.

#### Associated Street Widenings

Certain existing streets within the study area are currently not capable of accommodating projected traffic volumes and are therefore recommended as future street improvement projects. Traffic projections for the year 2000 vary for numerous elements of the Metropolitan Area Transportation network, depending upon which alternative of the CBD Loop Arterial is included (see Appendix A). The extent of street widenings within the study area needed to accommodate projected traffic volumes at Level of Service C, however, are identical for the three transportation networks including Alternatives A, B and the Preferred alternative of the CBD Loop Arterial, respectively.

Figure 3.6 indicates needed street widenings and intersection improvements, all of which would be needed for any of the alternatives of the CBD Loop Arterial.

#### Right-of-Way Requirements

The numbers of buildings to be acquired by the Preferred Alternative for the project are summarized in Table 3.1. This table also includes information on Alternatives A and B for comparative purposes. Estimated project costs appear in Tables 3.2 and 3.3.

Between I-235 and Woodland Avenue, the project requires the acquisition of commercial properties, apartments and single-family dwellings. South of Woodland Avenue, most of the properties required for right-of-way are commercial. The portion of the east-west segment west of the Des Moines River is located primarily within existing railroad and street rights-of-way but does require several commercial properties. East of the Des Moines River, the project requires single-family dwellings and commercial properties.

The portion of the east-west segment from S.W. Sixth Street to S.W. First Street and the partial interchange at S.W. Ninth Street necessitate the removal of portions of the Burlington Northern, Inc., trackage. The ramp from the westbound lanes of the east-west segment of the CBD Loop Arterial and the location

of the alternative from west of S.W. 14th Street to S.W. Ninth Street necessitate the removal of the trackage of the Chicago & North Western Transportation Company from west of S.W. 14th Street to S.W. Seventh Street. New railroad trackage is proposed between S.W. Sixth Street and S.W. Third Street to connect existing trackage of the Chicago & North Western Transportation Company and the Burlington Northern, Inc., to that of the Chicago, Rock Island and Pacific Railroad Company trackage and thereby maintain railroad service to remaining customers of the former two railroad companies (see Plate 7, Appendix C, and Figure 3.5).

#### DESCRIPTION OF ALTERNATIVES EVALUATED IN DETAIL IN THE DRAFT EIS

This section describes the alternatives which were evaluated in detail in the Draft EIS. The construction alternatives have been divided into several elements, and a description of each major element follows. In addition, each major roadway element will include associated intersection improvements, side street connections, cul-de-sacs for certain existing streets, and other miscellaneous improvements. Design criteria that were used in the preliminary design of these alternatives is included in Table A-2, Appendix A.

#### Major Alternatives - A and B

##### Alternative A - Northern Variation

This alternative of the CBD Loop Arterial will be described in two segments: a north-south segment and an east-west segment (see Figures 3.1 and 3.2). The north-south segment provides a connection from the existing Harding Road-19th Street one-way couplet south of I-235 to Fleur Drive south of the Racoon River. The east-west segment provides a connection from the north-south segment to U.S. Highways 65-69. Plates 1, 2, 3, 4, 7, 9, 10 and 12 (Appendix D) and Plates 8-12 (Appendix C) illustrate major features of this alternative.

The north-south segment of Alternative A consists of separate multilane, one-way roadways on new alignment, connecting to existing Harding Road and 19th Street south of I-235. Each independent one-way roadway proceeds southwesterly and the two roadways converge in the vicinity of Center Street, forming a multi-lane, divided roadway. The southerly extension of Harding Road is a one-way southbound roadway, while the 19th Street extension is one-way northbound. Proceeding south of Center Street, these two roadways are separated by a median, continue south along the existing corridor of Harding Road to Ingersoll Avenue and then continue south on new alignment, cross the Racoon River and then connect to existing Fleur Drive, a four-lane, divided roadway. The proposed action includes at-grade intersections with School



Street and Cottage Grove Avenue and underpasses at Woodland Avenue and Grand Avenue. Traffic flow is maintained on the latter two roadways, but no connections are provided to the proposed action for such streets. The proposed action overpasses the Raccoon River and railroad tracks north of the river.

Two subalternatives were considered for the junction at Ingersoll Avenue: Subalternative 1A (see Figure 3.1) provides for a modified diamond interchange, with the CBD Loop Arterial overpassing Ingersoll Avenue, while Subalternative 2A (see Figure 3.2) provides for a major signalized at-grade intersection at Ingersoll Avenue. Due to the difference in traffic operations between the two subalternatives, it was determined that Subalternative 1A would be a divided, four-lane facility north of Grand Avenue with a four-foot median, while Subalternative 2A would be a divided, six-lane facility north of Grand Avenue with a 16-foot median. South of Grand Avenue the median width for Subalternative 2A is reduced to four feet prior to the bridge over the railroad tracks and the Raccoon River. Both subalternatives have four-foot medians on this bridge until transitioning to meet the existing 16-foot median (approximately) on Fleur Drive. Both subalternatives of the north-south segment follow the same general alignment throughout so that the construction could be staged to add the Ingersoll Avenue interchange at a later time if the intersection were constructed initially.

The east-west segment of Alternative A (see Figures 3.1 and 3.2) is a four-lane, divided highway which begins near the intersection of Ingersoll Avenue and 16th Street, curves southward to follow along 15th Street and crosses the Des Moines Union Railway Company's 11th Street yard, then curves eastward along the present alignment of Market Street, crosses under the S.W. Ninth Street, S.W. Eighth Street and S.W. Seventh Street viaducts near Elm Street, follows Elm Street easterly, crosses the Des Moines River, continues eastward along the south side of Raccoon Street, and then curves to the southeast to connect with Scott Avenue east of S.E. 14th Street. The median width varies, being approximately 16 feet wide at Ingersoll Avenue, narrows to four feet south of Walnut Street, widens to 16 feet near S.W. 13th Street, widens to approximately 50 feet in crossing under existing viaducts at S.W. Ninth, S.W. Eighth and S.W. Seventh Streets, narrows to 16 feet near S.W. Fifth Street, narrows to four feet near S.W. First Street, widens to 16 feet near S.E. Fourth Street, widens to maximum of 50 feet in the vicinity of undercrossings of S.E. 14th Street and E. 15th Street Extension and then ends near S.E. 15th Street.

This alternative includes the relocation of Market Street from S.W. 16th Street to S.W. 11th Street; partial interchanges at S.W. Ninth Street, S.W. Eighth Street, S.E. 14th Street and at an extension of E. 15th Street; and at-grade intersections at

16th Street, Grand Avenue, Locust Street, Walnut Street, S.W. 14th Street, S.W. 11th Street, S.W. Eighth Street, S.W. Fifth Street, S.W. Third Street, S.W. Second Street, S.W. First Street, S.E. Fourth Street, S.E. Sixth Street and S.E. Ninth Street. No median openings are provided at the intersections with S.E. Fourth and S.E. Ninth Streets. At-grade railroad crossings are provided at the north-south track of the Des Moines Union Railway Company (west of S.W. 11th Street) and at the crossing of the Chicago & North Western Transportation Company (in the vicinity of S.E. 11th Street, north of Scott Avenue).

New right-of-way, in addition to existing street right-of-way, will be required for the proposed action. Right-of-way requirements for the north-south segment of Alternatives A and B, including Subalternatives 1A, 2A, 1B and 2B, between I-235 and Woodland Avenue, will include acquisition of commercial properties in the vicinity of Cottage Grove Avenue and dwellings and apartment housing units. Table 3.1 includes summaries of the numbers of buildings to be acquired of various uses for the respective subalternatives. Right-of-way and relocation assistance cost estimates are included in Table 3.2. Alternatives A and B will require the acquisition of primarily commercial properties between Woodland Avenue and the Raccoon River relative to the north-south segment, with Subalternatives 1A and 1B involving more right-of-way for their interchanges at Ingersoll Avenue than is needed for Subalternatives 2A and 2B. Right-of-way will also be required in crossing railroads north of the Raccoon River and in crossing Des Moines Water Works property south of the river.

Right-of-way for the east-west segment of Alternative A will be required between Ingersoll Avenue and Grand Avenue and along the east side of 15th Street from Grand Avenue to Walnut Street. This area includes predominantly commercial properties. Additional commercial and railroad properties will be affected in progressing to and along the corridor of Market Street. One warehouse building south of Market Street and west of S.W. 13th Street will have to be partially acquired, and the remaining portion will need to be remodeled. Several warehouse and commercial properties between S.W. 11th and S.W. Ninth Streets will be required south of Market Street for interchange ramps with S.W. Ninth Street.

A ramp from the east-west segment to S.W. Eighth Street will require acquisition of industrial and warehouse buildings. Railroad right-of-way will have to be partially acquired in order to relocate Market Street from S.W. 16th Street to S.W. 11th Street.

#### Alternative B - Southern Variation

This alternative of the CBD Loop Arterial also includes both a north-south segment and an east-west segment (see Figures 3.3



and 3.4). The north-south segment for this alternative is nearly identical to the north-south segment of Alternative A, except for the configuration of its interchange with the east-west segment in the vicinity of the Raccoon River. Alternative B also contains two similar subalternatives, designated 1B and 2B, referring to the interchange or intersection at Ingersoll Avenue, respectively, as described under Alternative A (see Figures 3.3 and 3.4). Median widths for Subalternatives 1B and 2B are identical to those of Subalternatives 1A and 2A, respectively. Alternative B is illustrated in Plates 1, 2, 5, 6, 8, 11, 12 and 13 (Appendix D) and Plates 8-12 (Appendix C).

The east-west segment of Alternative B is a multilane, divided roadway which begins at an interchange with the north-south segment. It differs from the east-west segment of Alternative A for only a .6-mile segment which takes a more southerly route than does that of Alternative A. This segment begins north of the flood wall along the north side of the Raccoon River and west of the north-south segment, with two lanes being westbound and one lane being eastbound with a four-foot median. Its alignment curves to the southeast, passes under the existing Fleur Drive bridge, becomes a four-lane, divided roadway with the median width increasing to 16 feet, and follows Market Street eastward to the vicinity of S.W. 11th Street where it joins the alignment of the east-west segment of Alternative A, previously described.

The features of Alternative B to the east of S.W. 11th Street are identical to those of Alternative A. This east-west segment of Alternative B includes partial interchanges at S.W. Ninth Street, S.W. Eighth Street, S.E. 14th Street and at the extension of E. 15th Street; and at-grade intersections at S.W. 16th Street, S.W. 14th Street, S.W. 11th Street, S.W. Eighth Street, S.W. Fifth Street, S.W. Third Street, S.W. Second Street, S.W. First Street, S.E. Fourth Street, S.E. Sixth Street and S.E. Ninth Street. As for Alternative A, no median openings are provided at the intersections with S.E. Fourth and S.E. Ninth Streets. At-grade railroad crossings are provided, as for Alternative A, at the north-south track of the Des Moines Union Railway Company (west of S.W. 11th Street) and at the crossing of the Chicago & North Western Transportation Company (in vicinity of S.E. 11th Street).

The location of this east-west segment of Alternative B in the vicinity of the north-south segment necessitates the relocation of two railroad tracks, one belonging to the Chicago, Rock Island and Pacific Railroad Company and the other belonging to the Chicago & North Western Transportation Company. Both tracks are proposed to be relocated, beginning approximately 2,300 feet

southwest of the center line of the north-south segment, with one new track connecting to the two railroad company tracks and proceeding to the northeast to connect to existing trackage of the Des Moines Union Railway Company at a point approximately 800 feet southwest of the center line of the north-south segment (see Figure 3.5). Additional segments of railroad relocation in the vicinity of Fleur Drive and S.W. 16th Street are required to allow Chicago, Rock Island and Pacific Railroad Company and Chicago & North Western Transportation Company trains to use the Des Moines Union Railway Company trackage to bypass the roadway of this alternative. This alternative will necessitate removal of trackage of the Chicago & North Western Transportation Company trackage from west of S.W. 11th Street to S.W. Seventh Street. New railroad trackage between S.W. Sixth Street and S.W. Third Street is identical to that described for the east-west segment of Alternative A.

Right-of-way requirements for Subalternatives 1B and 2B of the north south segment of the CBD Loop are nearly identical to Subalternatives 1A and 2A of Alternative A, respectively. The main differences between the two alternatives are in the areas south of Grand Avenue where ramps of Alternative B require more right-of-way than was needed for Alternative A; these areas are both north and south of the Raccoon River. The east-west segment of Alternative B is located along railroad right-of-way north and northeast of the Raccoon River to the vicinity of S.W. 17th Street. Continuing eastward, the roadway is located within the railroad and Market Street rights-of-way to the vicinity of S.W. 11th Street. East of S.W. 11th Street, right-of-way requirements of Alternative B are identical to those of Alternative A, beginning with the S.W. Ninth Street interchange ramp area.

#### 15th Street-Tuttle Street Extension

This series of street extensions is associated only with Alternative B of the CBD Loop Arterial. It is illustrated in Plate 11, Appendix D. The extension of 15th Street begins at Walnut Street and proceeds southward, crossing the Des Moines Union Railway Company's 11th Street yard and the proposed CBD Loop Arterial on a viaduct, then descends in grade as it continues south to end at the Tuttle Street extension. The Tuttle Street extension begins at the west end of existing Tuttle Street near S.W. 14th Street and proceeds westward to the extension of S.W. 16th Street. The extension of S.W. 16th Street between the Tuttle Street extension and Wabash Street is also included in this group of new streets.

All of the above streets are proposed to be two-lane streets and will primarily provide improved access to the surrounding area south of the railroads, Market Street and the east-west segment of the CBD Loop Arterial.



The commercial building to be acquired for the extension of 15th Street south of Walnut Street is listed in Table 3.1. In addition, right-of-way will be required for the extension of this roadway across the trackage and yards of three railroad companies and industrial properties between Market Street and the extension of Tuttle Street. No other buildings need to be acquired for these street extensions.

#### No Action Alternative

The No Action alternative accepts existing street and highway characteristics as they are at the present time. Therefore, no physical changes are included for pavement widths or grades, right-of-way widths, on-street parking arrangements, traffic circulation patterns or traffic control devices (traffic signals, signs and pavement markings).

As indicated in Figure 2.8, there are several areas with traffic congestion and poor levels of service within the existing street and highway network. Levels of service are illustrated in Figure 2.9. In addition, numerous accidents have occurred in these same areas (Figure 2.10 and Table 2.2). If no changes are made in the existing street and highway network, it is expected that traffic congestion and traffic-related accidents will continue to occur and will increase in proportion to future increases in traffic volumes.

It is recognized that removal of parking, minor improvements of pavement geometrics, altering of traffic circulation patterns or changes in traffic control may increase the level of service in certain areas. However, traffic congestion within the CBD and other areas and poor access to industrial areas near the CBD will continue. This alternative will therefore not meet the needs of the proposed action. In addition, other negative impacts are expected within the existing street network including traffic noise, exhaust emissions, fuel consumption, road-user costs, land use, emergency services and accessibility.

In order to preserve the integrity of the existing street and highway system, existing pavements and traffic control devices will continue to need maintenance. It is also expected that maintenance costs will increase as traffic volumes increase within the system in the future.

The removal of existing on-street parking in order to increase traffic capacities of streets will have adverse effects on businesses in the CBD as well as on residences and multiple housing areas along other streets. Adequate off-street parking is not currently available to compensate for losses of on-street parking spaces. Acquisition of off-street areas for parking

would require the displacement of businesses and residences. Any increased demand for parking in the future will likewise add to parking problems.

An analysis of parking needs in the CBD appears in the report "Des Moines CBD Parking Study," city of Des Moines, Iowa, June, 1982. This study recommended the construction of seven parking ramps to the west of the Des Moines River to satisfy future needs for approximately 4,885 additional parking spaces. This analysis was based on ongoing and planned future redevelopment of the area. Initial construction was recommended for ramps in the fringe areas of the parking districts. Needs for parking in the area east of the Des Moines River were recommended to be met by the construction of surface parking areas.

#### Transportation System Management Alternative

Fringe parking, ride-sharing, traffic signal timing and other relatively low-cost improvements are additional transportation considerations in the project corridor.

The Metropolitan Transit Authority (MTA) currently provides bus service to several passengers who park their automobiles in fringe areas, remote from the CBD, and then travel to their places of employment. MTA is currently attempting to secure permission to install signs in five or six fringe parking areas, such as at shopping centers, to encourage fringe parking and use of the bus system services. Only one site is currently identified by signs (in the vicinity of Merle Hay Road and Aurora Avenue).

No data is available concerning the number of persons who use either the signed parking area or other nondesignated parking areas within the community and then take a bus to their destinations. In a previous attempt to increase the use of fringe parking, employee parking was provided at the Veterans' Memorial Auditorium (10-acre parking lot bounded by I-235, Third Street, Crocker Street and Fifth Avenue), and MTA shuttle buses were then used to transport employees to the CBD during peak hours. This program was not successful and was dropped. As another means of encouraging the use of buses, including park-and-ride situations, MTA has developed a program whereby employers pay a portion of the cost of bus transportation for their employees. Bus usage in February, 1982, according to MTA estimates, provided transportation to 14 percent of the peak-hour person trips into and out of the CBD.

Other means of reducing individual automobile trips into the CBD are provided through ride-sharing (car-pooling and van-pooling), the use of bicycles, motorcycles and mopeds, and walking. Use of taxicabs may also qualify as ride-sharing in some



instances. Walking does not provide much reduction in automobile travel due to the relatively small number of trips accomplished by walking. Choice of walking as a mode of travel is often dependent upon weather conditions and distances to be walked. Ride-sharing, however, can be effective in reducing the number of automobile trips into and out of the CBD. Car-pooling among employees has been encouraged in the past, and van-pooling has been supported by various employers. No data is available at the present time on the number of persons that travel to work via ride-sharing means or by bicycle, motorcycle or moped. The use of the latter three modes of travel, like walking, are highly dependent upon weather conditions.

The city of Des Moines has improved traffic flow and efficiency through recent traffic signalization improvement projects in the vicinity of the proposed action. Recent projects have included signal timing improvements along Grand Avenue and Ingersoll Avenue west of the CBD and within the Harding Road-19th Street corridor north of Ingersoll Avenue. A future feasibility study is being considered by the city of Des Moines to investigate traffic signalization improvements within the CBD. No other public improvement projects are under active consideration relative to revision of street geometrics or traffic operations within the project corridor.

#### ALTERNATIVES CONSIDERED, PARTIALLY EVALUATED AND DELETED FROM FURTHER CONSIDERATION IN THE DRAFT EIS

Several alternatives were preliminarily developed and evaluated and were then deleted from further detailed consideration because they would not meet the project needs or were deficient in some way. A brief description of each alternative thus deleted follows. Many of these alternatives are only segments of the total proposed facility. The numeral identifications included in the descriptions correspond with the numerals appearing on the map in Figure 3.7. In the following section, references to "Alternative A" and "Alternative B" are used to designate the previously described alternatives which were selected for detailed evaluation.

#### CBD Loop Alternatives

1. Harding Road - 19th Street - Pleasant Street Alternative  
This alternative is a north-south segment of the proposed arterial facility from I-235 to the vicinity of Woodland Avenue. To the south of Pleasant Street it is a divided multilane facility located east of and adjacent to Woodland Cemetery. The remaining portion of this alternative consists of two one-way roadways. The south-bound roadway connects to Harding Road in the vicinity of

School Street south of I-235, curves southwesterly, intersects with Cottage Grove Avenue and then curves southerly to be located east of and adjacent to Woodland Cemetery and joins the southbound lanes of the divided roadway previously described. The northbound roadway branches off the divided roadway in the vicinity of Pleasant Street, proceeds northeasterly, crosses 20th Street, then curves northerly to join 19th Street north of Center Street and continues along 19th Street to the vicinity of School Street and I-235. The alignments of the northbound and southbound roadways were designed to provide improved horizontal roadway alignment as compared to the existing roadways.

This alternative was deleted from further consideration due to the following factors:

- a. The area between the one-way roadways north of Pleasant Street would be completely surrounded by major roadways and could be expected to deteriorate in condition. Much of the area is within the Sherman Hill Historic District.
- b. The diagonal northbound roadway would cross existing properties and sever streets between the cemetery and 19th Street and would adversely affect a portion of the Sherman Hill Historic District.

An alignment similar to this alternative, with modifications to minimize the above impacts, has been included in the final alternatives (Alternatives A and B) which were selected for detailed evaluation.

2. Harding Road - Fleur Drive - Raccoon River - Scott Avenue Alternative

This alternative consists of a divided, multilane roadway connecting to Alternative No. 1 at Woodland Avenue, proceeds south of Grand Avenue, curves southeasterly to cross the Raccoon River and Fleur Drive, curves easterly and then northeasterly to cross industrial and railroad properties north of the Raccoon River, being located between the Raccoon River and the Sec Taylor Baseball Stadium westerly of the Des Moines River, crosses the Des Moines River and follows Scott Avenue northeasterly to a junction with S.E. 14th Street.

This alternative was deleted from further consideration for the following reasons:



- a. Two crossings of the Raccoon River in the vicinity of Fleur Drive would increase the cost of this alternative in addition to doubling the construction impacts on the Raccoon River and Water Works Park.
- b. An interchange would be required to transfer traffic between the proposed roadway and Fleur Drive. Preliminary traffic volume projections indicated the major movements to be from north-south Fleur Drive to the north-south segment of the proposed roadway. The resulting interchange was envisioned to occupy the majority of the peninsular area of Water Works Park, with resulting environmental and flood plain impacts.
- c. The proposed roadway from the easterly crossing of the Raccoon River to the vicinity west of Sec Taylor Stadium crosses industrial and railroad properties. Its location in these areas would adversely divide and impact properties and would also result in high costs of property acquisition and relocation.
- d. Due to the proximity of the Sec Taylor Stadium and its access roads to the north bank of the Raccoon River, there does not appear to be sufficient space available to construct the proposed arterial roadway without encroachment into the floodway of the river. Existing parklands along the north side of the river would be severely impacted by such a facility.
- e. The location of the proposed arterial along Scott Avenue is located in an area that is primarily residential in nature. The impact of the proposed facility is expected to be adverse, although Scott Avenue is currently an arterial street that accommodates a considerable volume of traffic.

3. Harding Road - 19th Street - One-Way Couplet Alternative

This alternative is a portion of the proposed arterial between I-235 and Fleur Drive and consists of two one-way roadways. The southbound roadway begins at Harding Road in the vicinity of School Street and I-235, curves southwesterly, crosses Cottage Grove Avenue and then curves southerly to be located east of and adjacent to the Woodland Cemetery. This roadway is similar to such roadway in Alternative No. 1 previously described. The

southbound roadway then continues south to Grand Avenue and southeasterly to Fleur Drive as in Alternative No. 2. The northbound roadway begins in the vicinity of Fleur Drive, as for Alternative No. 2, and curves northeasterly and then northerly to follow 19th Street from Ingersoll Avenue to the vicinity of School Street and I-235.

Due to the following adverse impacts, this alternative was deleted from further detailed consideration:

- a. The resulting area located between the two one-way roadways extends from the Raccoon River to School Street and is completely surrounded by major roadways. This area includes a portion of the Sherman Hill Historic District and residential and commercial areas. The northbound roadway would divide the residential and historic area and isolate it from the rest of the area, possibly leading to structure or area deterioration. High traffic volumes would also be introduced along 19th Street.
  - b. The northbound roadway would require acquisition of the Des Moines Technical High School and the commercial buildings immediately to its west. Several of these structures are significant architectural or historic sites.
  - c. The northbound roadway would be located adjacent to the west side of Chamberlain Park north of Ingersoll Avenue. Traffic noise and pedestrian access to the park would be among the adverse impacts of the proposed roadway relative to the park.
4. Harding Road - 19th Street - Center Street Alternative

This alternative is similar to Alternative No. 1 between Woodland Avenue and School Street. The southbound roadway is essentially located as in Alternative No. 1. The northbound roadway is located east of the southbound roadway from Woodland Avenue to just south of Center Street, with the two roadways being separated by a median. At a point south of Center Street, an improved radius is provided to curve the northbound roadway to the east along Center Street and another improved radius is provided to curve the roadway north onto 19th Street. This alternative then proceeds north along 19th Street to the vicinity of School Street and I-235. The traffic routing of the northbound roadway is similar to the existing traffic pattern, although sharp radius curves currently exist at Center Street. The proposed arterial



facility will, however, have direct connections to other major thoroughfares; and each of the one-way roadways are expected to carry more traffic than currently is present on such roadways.

This alternative was deleted from further analysis due to the following reasons:

- a. The area between the two one-way roadways north of Center Street to the vicinity of School Street and I-235 would be completely surrounded by major roadways. The north-south traffic volumes would increase from those currently using existing streets along similar routes, resulting in increased impacts on the area. Due to such anticipated traffic volume increases, the area will be separated from the balance of the residential area and historic district and may begin to deteriorate in the future.
- b. Radii improvements at Center Street, although improvements over existing conditions, do not adequately improve driving conditions as does Alternative No. 1.

5. Fleur Drive - Market Street Alternative

An alignment along the Market Street corridor easterly of S.W. 15th Street is one of the alternatives selected for further design and evaluation (see Alternative B in previous section). Alternative No. 5 of the deleted alternatives begins at said Alternative B in the vicinity of S.W. 15th Street and proceeds southwesterly, crossing the Raccoon River, and then westerly to connect to Fleur Drive.

This alternative was deleted for the following reason:

- a. Although this alternative would provide a connection from Fleur Drive to and from the east, no direct connection would be provided to the northern termini in the vicinity of School Street and I-235. Traffic would have to use the existing street network to reach such termini.

6. Harding Road - Market Street Alternative

Alternative No. 6 is a segment of the proposed arterial that joins to Alternative No. 1 at Woodland Avenue, curves southeasterly, crosses Fleur Drive southwesterly

of its intersection with Locust Street and joins to Alternative B easterly of S.W. 15th Street. This alternative provides a direct connection between north-south and east-west segments of the proposed arterial.

Due to the following reasons, this alternative was deleted from further consideration:

- a. The diagonal routing between Fleur Drive and Woodland Avenue necessitates the acquisition and relocation of numerous facilities, including commercial establishments and Des Moines Technical High School. Some sites with architectural or historic significance are included.
- b. The elevation of the proposed facility rises from near the existing ground level in the vicinity of Market Street and S.W. 15th Street to cross railroad tracks (providing a 22- or 23-foot vertical clearance) and then overpasses Fleur Drive with a vertical clearance of at least 14'-6". Fleur Drive currently overpasses said railroad trackage. The roadway would thereby be elevated approximately 50 feet above the existing railroad tracks, resulting in high construction costs for the structure.
- c. From Ingersoll Avenue to Fleur Drive, it is anticipated that the proposed arterial would be elevated above the existing terrain. This would result in increased costs for the facility, and the area would be visually impacted and divided.

#### 7. Tuttle Street Alternative

The proposed arterial in this alternative begins at Alternative No. 2 southeasterly of the eastern crossing of the Raccoon River, curves northeasterly and then easterly to join Tuttle Street in the vicinity of S.W. 11th Street. Its alignment then follows Tuttle Street to S.W. 5th Street, proceeds northeasterly, crosses the Des Moines River north of Sec Taylor Stadium and then joins Alternatives A and B south of Raccoon Street.

Alternative No. 7 was dropped from further design and evaluation because of the following:

- a. Between its junction with Alternative No. 2 and S.W. Second Street, this alternative requires the



acquisition and relocation of several industrial and railroad properties. Right-of-way acquisition and relocation costs are expected to be prohibitively high.

- b. The alternative would cross various park properties between S.W. Second Street and the east side of the Des Moines River, with resulting impacts to such parklands.
- c. Numerous railroad tracks between the Raccoon River and S.W. Ninth Street would have to be crossed. Almost all of these would have to be either crossed at-grade or overpassed. Due to the relatively close spacing of railroads, a combination of at-grade crossings and overpasses is not feasible. Numerous at-grade crossings would deter traffic movements and reduce safety, whereby overpassing all tracks would be financially unfeasible.

8. Scott Avenue - Maury Street Alternative

The westerly terminus of this segment is located easterly of the Des Moines River at a point on Alternative No. 2. Its alignment then curves and proceeds easterly to join the route of existing Maury Street ending at the junction of S.E. 14th Street.

This alternative was deleted for the following reasons:

- a. Scott Avenue east of S.E. 14th Street is planned to be the major roadway in the future, with Maury Street being a lower-level roadway.
- b. Due to the diagonal nature of the alignment of this alternative as it relates to existing property layouts, the acquisition and relocation of numerous residential properties would be required. The impact on the remaining neighborhood is expected to be severe also.

9. Raccoon Street - Maury Street Alternative

This alternative begins in the vicinity of E. Sixth Street at Alternatives A and B then curves southeasterly to follow Maury Street easterly to a junction with S.E. 14th Street.

This alternative was deleted for the same reasons as was Alternative No. 8.

10. 15th Street Alternative

The 15th Street alternative is a divided multilane arterial roadway connecting to the 15th Street leg of Alternative A and thence following 15th Street and Crocker Street to the north and west. This alternative then connects with the existing one-way streets of Harding Road and 19th Street just south of I-235.

This alternative was deleted from further review because of the following factors:

- a. The anticipated traffic volumes along Cottage Grove Avenue, Crocker Street and 15th Street north of Ingersoll Avenue would require the widening of such streets. Resulting impacts are expected to be severe for the commercial area along Cottage Grove Avenue, to residential areas, the historic district and St. Edmunds School areas along Crocker Street, and to residential areas and the historic district along 15th Street.
- b. The Harding Road and 19th Street connections intersect with Cottage Grove Avenue at approximately right angles. The provision of other than relatively large turning radii would reduce the efficiency of traffic movements. Larger radii would require more extensive property acquisitions. The church at the northeast corner of 19th Street and Cottage Grove Avenue (Crocker Street) would restrict the turning radius in this quadrant of the intersection.
- c. The proposed arterial in this alternative would separate St. Edmunds School and its adjoining open space from the neighborhood south of Cottage Grove Avenue and Crocker Street and west of 15th Street. School pedestrian traffic movements and safety would be severely affected by the increased traffic on these roadways.
- d. Noise level increases would be a significant impact on the school, church and residential areas along the proposed arterial.



11. High Street Alternative

This alternative begins at Alternative No. 1 north of Woodland Avenue, curves easterly in the vicinity of High Street and then curves southeasterly to follow along 15th Street to meet the 15th Street leg of Alternative A in the vicinity of Locust Street.

This alternative was deleted for the following reason:

- a. Access from Fleur Drive to the north-south segment of the proposed arterial north of Woodland Avenue would be very indirect. This would result in extra vehicle miles of travel and reduced efficiency and safety of traffic operations.
- b. Adverse impacts on residential areas, commercial areas and historic district.

12. Tuttle Street - Scott Avenue Alternative

Alternative No. 12 begins at Alternative No. 7 in the vicinity of S.W. Third Street, curves southeasterly and then northeasterly, meeting Alternative No. 2 in the vicinity of S.E. Eighth Street.

This alternative was deleted from further consideration for the following reasons:

- a. The diagonal alignment east of the Des Moines River would be adverse to existing properties due to the angular crossing of these blocks, thus resulting in increased acquisition of residences and relocation impacts.
- b. Alternative Nos. 2 and 7, to which this Alternative No. 12 connects, were deleted.

13. Tuttle Street - Elm Street Alternative

This alternative begins at Alternative No. 7 at a point in the vicinity of the southerly extension of S.W. 15th Street, proceeds northeasterly and then curves more northeasterly to join Alternatives A and B in the vicinity of S.W. Ninth Street and Elm Street.

Due to the following factors, this alternative was deleted from further consideration:

- a. Its alignment would cross several railroads and commercial and industrial properties, resulting in high costs of right-of-way acquisition and relocation.
- b. Comment c. of Alternative No. 7 is applicable to this alternative.

#### Indianola Avenue Connection Alternatives

##### I-1. S.E. First Street Alternative

This alternative provides for a segment of divided highway combined with two one-way streets to connect the CBD Loop Arterial with Indianola Avenue. Northbound traffic proceeds northeasterly from Indianola Avenue along the route of S.E. First Street to the Raccoon River, crosses said river and proceeds northwesterly along the route of S.W. First Street, then curves more northwesterly to pass north of the Sec Taylor Stadium and then curves more northerly to become aligned with S.W. Second Street in the vicinity of Elm Street.

The southbound roadway proceeds southerly of Elm Street along the route of S.W. Third Street, then curves southeasterly, crosses the Raccoon River and then curves to meet the proposed divided highway near Jackson Avenue. This alternative then follows the existing alignment of S.E. First Street to Indianola Avenue.

Alternative No. I-1 was deleted from further consideration for the following reasons:

- a. The northbound lanes were located to prevent intrusion into Columbus Park northerly of Indianola Avenue. This would result in the intrusion of the southbound lanes into properties along the westerly side of S.E. First Street. The alignment of the southbound lanes from the Raccoon River to Indianola Avenue therefore would require the acquisition and relocation of numerous residential and commercial properties.
- b. Properties south of the Raccoon River, north of the convergence of the southbound and northbound roadways and between the two said roadways would be separated from the current neighborhood. It is expected that this area would deteriorate.



- c. An additional east-west roadway, generally paralleling the Raccoon River to the south, would be required to accommodate traffic. This roadway would connect from the southbound roadway at a point south of the river and would proceed easterly, with a junction at the northbound roadway and an eastern terminus southerly of the Scott Avenue bridge. This roadway would require additional right-of-way and relocations.
- d. To accommodate the projected turning movements, this alternative would require a major intersection improvement at Indianola Avenue. However, due to the presence of Columbus Park in the northeasterly quadrant of this intersection, the necessary intersection improvements cannot be provided without encroachment into the park unless the north leg of the intersection is shifted considerably more to the west. Thus, either the park or additional private properties would be impacted.

#### I-2. S.W. First Street - S.E. First Street Alternative

This alternative provides for two one-way streets to connect the proposed CBD Loop Arterial with Indianola Avenue. The northbound roadway proceeds northerly from Indianola Avenue via the route of S.E. First Street and then curves northwesterly to join the alignment of S.W. Second Street as extended south of Elm Street.

The southbound roadway follows the route of S.W. Third Street as extended southerly of Elm Street and then curves southwesterly to follow the route of S.W. First Street to Indianola Avenue.

This alternative was deleted from further consideration and analyses due to the following:

- a. A relatively large area would be included between the two one-way roadways. The area south of the Raccoon River includes numerous residences, a church, a parochial school, a convent, several businesses and neighborhood facilities. The existing area would therefore be divided, with that portion between the one-way roadways being isolated from the balance of the neighborhood. The isolated area would be expected to deteriorate.

- b. A major intersection improvement at the junction of the northbound roadway at Indianola Avenue, as discussed for Alternative No. I-1, would have similar impacts for this alternative. In addition, an additional major intersection at the junction of the southbound roadway and Indianola Avenue would have a significant impact on the church at the northeasterly corner of such an intersection.
- c. Pedestrian access to the church and the parochial school that are located between the two one-way roadways would be adversely affected by the roadways.

#### S.E. 14th Street - S.E. 15th Street Alternatives

##### 14A. S.E. 14th Street Alternative

This alternative provides for a southbound roadway from the vicinity of E. Walnut Street to the railroad viaduct, thence becoming known as S.E. 14th Street to the bridge over the Des Moines River. The northbound roadway proceeds north from the said river bridge to the vicinity of the north end of the railroad viaduct, becomes E. 15th Street, curves northeasterly and then northwesterly along the route of E. 15th Street to E. Walnut Street. Existing S.E. 14th Street is a divided four-lane roadway from the convergence of E. 14th and E. 15th Streets north of the railroad viaduct to south of the bridge over the Des Moines River. The proposed alternative would include widening of the existing roadway to the extent necessary to accommodate projected future traffic volumes.

This alternative was deleted from further consideration due to the following reason:

- a. Based on preliminary traffic volume projections at the junctions of S.E. 14th Street with Scott Avenue and Maury Street, widenings of S.E. 14th Street, including the provision of additional turning lanes, would result in very large intersections or interchanges. Traffic could be accommodated more efficiently and safely by separating the northbound and southbound roadways and provide separate junctions at Scott Avenue and Maury Street. Such an alternative as the latter was selected for further preliminary design and evaluation.



## 15th Street Connection Alternative

### 15A. Fleur Drive - 15th Street Alternative

This alternative consists of the northeasterly extension of Fleur Drive to the vicinity of Ingersoll Avenue, thence curves northerly to follow along the route of 15th Street. In conjunction with Alternative Nos. 1, 2 and 4, this alternative was preliminarily considered to distribute Fleur Drive traffic to Locust Street, Grand Avenue, Ingersoll Avenue and 15th Street and to relieve traffic congestion in the vicinity of Locust Street, Grand Avenue, 18th Street, 17th Street and Ingersoll Avenue.

This alternative was deleted due to the following factors:

- a. Right-of-way needed for this alternative included expensive commercial businesses.
- b. The alignment of this alternative would cross existing blocks in a diagonal manner and intersect existing streets at objectionable angles, resulting in sharp, inefficient turning movements.

### Street Widening Alternatives

As an alternative to providing a new transportation facility in the project corridor, the possibility of widening existing streets to accommodate the projected traffic volumes was investigated. As shown in Figure 2.8, the projected traffic deficiencies are located in four general corridors: a north-south corridor along Harding Road and Fleur Drive, a north-south corridor along First Street, a north-south corridor along S.E. 14th Street, and an east-west corridor through the central business district. The "Street Widening" alternatives propose improvements to existing streets along or parallel to the above corridors as a method of satisfying the future traffic demand.

#### Street Widening Alternative No. SW-1

This alternative consists of widening and/or removing parking from those individual streets within the study area that are not capable of accommodating projected traffic volumes. The following street modifications are included in Alternative No. SW-1 and are indicated in Figure 3.8:

1. 19th Street, Center Street to I-235.
2. Crocker Street, 19th Street to 16th Street.
3. Center Street, 19th Street to Harding Road.

4. Harding Road, Center Street to Ingersoll Avenue.
5. Ingersoll Avenue, Harding Road to 19th Street.
6. 19th Street, Ingersoll Avenue to Grand Avenue.
7. Grand Avenue, 18th Street to West of Harding Road.
8. 18th Street, Grand Avenue to Fleur Drive.
9. Fleur Drive, Valley Drive to 18th Street.
10. Indianola Avenue, East of S.W. Ninth Street to Hartford Avenue.
11. First Street, Indianola Avenue to Court Avenue.
12. S.E. Sixth Street, Raccoon Street to E. Court Avenue.
13. S.E. 14th Street, Hartford Avenue to E. Walnut Street.
14. E. 15th Street, E. Court Avenue to E. Walnut Street.
15. S.E. 14th Street - E. 15th Street Connection, south of E. Court Avenue.
16. Maury Street, S.E. 14th Street east to study limit.
18. Widening of streets within shaded area shown in Figures 2.8 and 3.8.

During the preliminary evaluation stage of the above alternative, the following major impacts were identified:

- a. The traffic analysis indicated a need for an increase of approximately 25 percent in the traffic handling capacities of streets in the central business district area. To provide such increases in capacities would require the widening of many streets and elimination of on-street parking within the CBD, as well as the removal of on-street parking in other areas. Due to the existing built-up character of this area, such major street improvements cannot be accommodated without narrowing or eliminating sidewalks and/or removing many existing multistory buildings. Based on right-of-way considerations alone, the widening of existing streets in the CBD area is considered to be an impractical solution. In addition, a recent 1982 study has stated that approximately 4,800 additional parking spaces will be needed in the downtown area, thus making the loss of existing parking a significant impact.
- b. The widening of existing streets in the CBD area would encourage the use of such streets for through-traffic movements, particularly if alternative parallel routes are not available. Accordingly, this alternative will further detract from the business usage character of the downtown area.
- c. Pedestrian movements in the CBD area would be severely impacted by the removal or reduction of sidewalk facilities or by the increase in traffic volumes.

Approximately 20,614 full-time persons were employed at companies with offices located within the 55-block area bounded by Grand Avenue, Des Moines River, Court Avenue, Fifth Avenue, Cherry Street, 13th Street, Mulberry Street, 16th Street, Des Moines Union Railway and 18th Street, being west of the Des Moines River (1982 data). In addition, approximately 1,363 persons were employed on the east side of the river in a 16-block area bounded by the Des Moines River, E. Court Avenue, E. Seventh Street and E. Grand Avenue (1982 data).

- d. The then proposed Walnut Avenue Transit Mall between Eighth Street and Fifth Street (now completed) would have been extremely difficult to implement due to the added traffic volumes in the CBD area. Traffic volumes would have increased further on parallel streets when this portion of Walnut Street was closed to through traffic for the transit mall.
- e. Major intersection or interchange improvements would be required at many locations including interchanges at Fleur Drive, S.W. Eighth and Ninth Streets and S.E. 14th Street, as well as other possible locations.
- f. The alternative would require the widening of four bridges: the Fleur Drive bridge over the Raccoon River, the First Street bridge over the Raccoon River, the S.E. 14th Street railroad viaduct north of Scott Avenue and the S.E. 14th Street bridge over the Des Moines River.
- g. A number of parks, open spaces and cemeteries would be affected by proposed street widenings including Chamberlain Park, Woodland Cemetery, St. Ambrose Cemetery, Columbus Park, Sec Taylor Stadium, Hawthorn Park, Water Works Park, and several areas of public open space near the Des Moines and Raccoon Rivers and in the CBD area. Impacts to certain park areas would include increases in traffic volumes, noise and exhaust emissions, in addition to visual and physical intrusion.
- h. The need to widen S.E. First Street from Indianola Avenue to the Raccoon River would necessitate acquisition of property fronting on both sides of the street or along only one side if all of the widening was made on one side. As Columbus Park is located on the east side of S.E. First Street, the widening would likely be along the west side of the present



roadway, causing full or partial acquisition of existing residential and commercial properties along that side of the street.

S.W. First Street would need to be widened from its intersection with S.E. First Street, across the Raccoon River (including bridge widening) and then to the junction of S.W. First Street and Riverside Drive, such being between and adjacent to parklands. To avoid widening S.W. First Street from its aforementioned junction with Riverside Drive to Court Avenue, existing S.W. First Street and Riverside Drive could be converted from two-way streets to a one-way couplet.

- i. The horizontal alignment of the present roadway relative to northbound traffic, via Harding Road-Center Street-19th Street restricts travel to speeds of 15 miles per hour at two curves. In order to provide for higher speeds and improve the level of service and other operational characteristics, a larger radius horizontal curve is proposed for the curve from northbound Harding Road to eastbound Center Street and for the curve from the latter to northbound 19th Street. Additional right-of-way will need to be acquired, which may include potential historic or architectural sites.

The area bounded by Harding Road, Center Street, 19th Street and Interstate 235, will continue to be isolated from the balance of the Sherman Hill Neighborhood area. School children destined for Edmunds School will have to continue to cross the 19th Street artery.

- j. The alternative will not provide an improved transportation facility to serve the industrial areas along Market Street and thus will not serve one of the primary needs defined for this project.

#### Street Widening Alternative No. SW-2

Due to the extent of impacts identified in the previous system, particularly in the CBD area, a second street widening alternative was investigated. This alternative, as shown in Figure 3.9, would replace the multiple east-west street widenings in the CBD area with a single east-west corridor consisting of Cherry and Mulberry Streets as one-way pairs west of Fifth Street and Court Avenue being a two-way street east of Fifth Street. Connection of this system to the west at the existing Grand Avenue-Locust Street one-way couplet

could be accomplished by a north-south one-way couplet consisting of 12th and 13th Streets from Cherry Street to Grand Avenue. By concentrating the east-west widening along this corridor, some of the impacts to the CBD area will be diminished; however, the following additional impacts were identified for this alternative:

- a. Right-of-way acquisition for 12th, 13th, Cherry and Mulberry Streets and Court Avenue would be more extensive than in Alternative No. SW-1.
- b. The existing pedestrian structure over E. Court Avenue, being south of the State Capitol Building, would be severely impacted by the widening of E. Court Avenue. This structure is an earth-filled arch and is approximately 160 feet wide (as measured along E. Court Avenue). A new State Historic Museum is proposed to be located to the south of this structure with pedestrian access to the State Capitol Complex.
- c. This alternative would require the reversal of the existing one-way eastbound traffic movement on Mulberry Street to a westbound movement, with resultant impacts on businesses and parking entrances designed for the present eastbound movement. This change would also result in two parallel one-way westbound streets (Mulberry and Walnut Streets), creating an undesirable traffic flow situation (unless Walnut Street were to be changed to a two-way street).
- d. The Court Avenue bridge over the Des Moines River would possibly have to be widened as part of this alternative.
- e. Item Nos. b, e, f, g, h, i and j listed in Alternative No. SW-1 would be similar in this alternative.

#### Street Widening Alternative No. SW-3

In order to reduce the impacts to the CBD and State Capitol area, an additional street widening alternative was investigated. This alternative would create a major east-west route along existing streets south of the CBD area, including portions of 16th Street, Market Street, S.W. 11th Street, Tuttle Street, S.W. Fifth Street, Jackson Avenue, S.E. First Street and Scott Avenue, in lieu of multiple or selected street widenings in the CBD area (Figure 3.10). Other street widenings outside of the CBD area for this

alternative are similar to Nos. 1 through 17 as listed for Street Widening Alternative No. SW-1. During the preliminary evaluation of Alternative No. SW-3, the following major impacts were found:

- a. Due to the volumes of intersecting traffic, the interchange improvements near S.W. Eighth and Ninth Streets and S.E. 14th Street would be more extensive than the previous alternatives.
- b. This alternative would result in increased out-of-way travel of approximately 3,000,000 vehicle-miles per year for east-west traffic, with resultant costs and delays to the road users.
- c. Right-of-way and relocation costs associated with this alternative would be significant along 16th Street, S.W. 11th Street, Tuttle Street, S.E. First Street and Scott Avenue and particularly so in the vicinity of S.W. Eighth and S.W. Ninth Streets.
- d. Sixteenth Street would collect and distribute traffic to existing east-west streets in the western part of the CBD. Its grade south of Mulberry Street would approximate the existing grade, and it would cross the western end of the Des Moines Union Railway yards as does the existing street.
- e. The proposed widening of Scott Avenue from the Des Moines River to S.E. 14th Street in this alternative will adversely affect the residential area it traverses through increased roadway and right-of-way widths and increased traffic volume, noise and exhaust emission levels. The Scott Avenue bridge over the Des Moines River will likely need to be widened as part of this alternative.
- f. S.E. First Street will have to be widened more than for Alternative Nos. SW-1 and SW-2 from Jackson Avenue to Scott Avenue. This will affect somewhat more right-of-way required to construct this segment of the roadway.
- g. In addition to those parks listed under Alternative No. SW-1, this alternative would also impact Allen Park and Cohen Park, adjacent to Scott Avenue. The horse watering trough located in Cohen Park, which is listed in the National Register of Historic Places, would be within the construction area of this alternative.



- h. Item Nos. e, f, g, h and i listed in Alternative No. SW-1 would be similar in this alternative.

### Summary of Street Widening Alternatives

Based on the extensive impacts to adjacent properties and parks, the increases in traffic volumes for local streets and in the CBD area, incompatibility with present and proposed developments in the CBD area, effects on historically and architecturally significant properties, major interchange or intersection problems at several locations, and other factors listed in the foregoing discussion, the Street Widening Alternatives were deleted from further consideration.

#### Grand Avenue-18th Street-Locust Street- Fleur Drive Area Street Modification Alternatives

Several alternative methods of relieving the existing traffic congestion on Grand Avenue, 18th Street, Fleur Drive and Locust Street in the vicinity of the Des Moines Technical High School, were analyzed. Nine alternatives were preliminarily designed, partially evaluated and deleted from further consideration for the following reasons:

1. All alternatives involved diagonal crossings of commercial blocks, resulting in anticipated high costs for right-of-way and relocation, and adverse impacts on land use.
2. All alternatives reduced accessibility to properties.
3. All alternatives, although relieving congestion for the traffic movement eastbound Grand Avenue to eastbound Locust Street traffic (by reducing conflicts with northbound Fleur Drive traffic destined for westbound Grand Avenue or Ingersoll Avenue), result in indirect and longer-distance travel for said northbound Fleur Drive.
4. All alternatives resulted in indirect traffic movements for westbound Grand Avenue traffic west of 14th Street to 19th Street, with traffic being diverted to Ingersoll Avenue as part of some alternatives. The traffic movement from westbound Grand Avenue to southbound Fleur Drive would be indirect for all alternatives.
5. Provision of the north-south segment of the CBD Loop Arterial, connecting Harding Road and Fleur Drive, resulted in reduced traffic volumes and congestion in this area and in the elimination of the need for such modifications relative to Alternatives A and B.

## ALTERNATIVES CONSIDERED SUBSEQUENT TO THE DRAFT EIS AND PUBLIC HEARING

As a result of input received in response to the Draft EIS and public hearing, the Des Moines City Council authorized an evaluation of five additional alternatives that had not been considered in the Draft EIS. A report on this evaluation appears in a December, 1984, document, "Concept Evaluation of Additional Alternates." Two of these alternatives (Alternatives C and D) were variations in the same north-south segment previously described for Alternatives A and B (Figure 3.11). Two of these were variations in the east-west segment previously described for Alternatives A and B (Alternatives E and F, Figure 3.11). The fifth alternative was a variation of the previously described Indianola Avenue Connection (Alternative G, Figure 3.11).

Four design variations of the Preferred alternative were evaluated in late 1985. One was a variation of the alignment in the Elm Street corridor, while another was a modification of the junction of the north south and east-west segments in the Des Moines Water Works. The third variation consisted of the extension of proposed railroad viaducts in lieu of an embankment between railroads for the E. 15th Street Extension and modification of S.E. 14th Street improvements. These alternatives are described in the following section.

### North-South Segment

Two additional alternatives (Alternatives C and D, Figure 3.11) in the north-south segment (in the Harding Road corridor) were developed between I-235 and the Raccoon River. The purpose of these alternatives was to attempt to reduce impacts to commercial and residential areas compared to the impacts of Alternatives A and B.

#### Alternative C

The alignments of the northbound and southbound roadways, connecting to 19th Street and Harding Road respectively to the south of I-235, were designed to merge at a common intersection with Cottage Grove Avenue. Furthermore, they were designed to be located to the west of businesses located southerly of Cottage Grove Avenue and east of Harding Road.

In order to avoid these businesses, the resulting horizontal alignment of the northbound roadway could not be designed for a speed limit any higher than 30 miles per hour (mph) due to the limited area in which to curve easterly and then northerly from Cottage Grove Avenue to tie into 19th Street in the vicinity of

I-235. This design would require the widening or replacement of the existing 19th Street bridge over I-235. The southbound roadway would accommodate a speed limit of 35 mph and would require partial widening of the Harding Road bridge over I-235.

The widening of Cottage Grove Avenue would be required from west of Harding Road to 19th Street to provide a four-lane, divided roadway. To reduce impacts to commercial properties, it was designed to be located northerly of the existing southerly curb line, thus requiring acquisition of properties along the northerly side rather than the acquisition of properties on both sides of Cottage Grove Avenue.

South of Cottage Grove Avenue the alignment of this six-lane, divided roadway was designed to be located adjacent to and east of Woodland Cemetery, to cross Woodland Avenue and High Street with at-grade intersections and to intersect with Ingersoll Avenue at an at-grade intersection. The median is proposed to be maintained through the intersection of High Street, thus eliminating crossing traffic at High Street. This alignment could also be extended south of Ingersoll Avenue to underpass Grand Avenue, overpass the railroads and the Raccoon River and connect to Fleur Drive as in Alternatives A and B of the north-south segment of the proposed CBD Loop Arterial. The vehicular speeds on Fleur Drive and its northerly extension through the Harding Road corridor would be in the range of 40 mph.

Due to such speeds for northbound traffic, the 30 mph curves northerly of Cottage Grove Avenue will represent a sudden 10 mph decrease in speed after through traffic has been traveling at 40 mph for several miles. This feature is undesirable from a traffic safety standpoint, and this alternative is therefore deficient relative to traffic safety and operations and is not recommended.

The provision of a grade separation at Woodland Avenue was considered relative to this alternative and not pursued. Although such could have accommodated a pedestrian overcrossing of the north-south segment, it would have required tall retaining walls from Pleasant Street to High Street and would have required an easterly shift in the north-south roadway which would have resulted in greater impacts on commercial properties north of Ingersoll Avenue. Such a grade separation would also have severely affected access to commercial properties between Woodland and Ingersoll Avenues.

The number of buildings required for the right-of-way is listed in Table 3.1. This alternative would require fewer single-family dwellings and commercial structures than would either Alternatives A or B. It would also impact one less structure considered eligible for the National Register of Historic



Places and be further removed from the Sherman Hill Historic District. It would be located closer to Woodland Cemetery and require a slight shifting to its entrance.

#### Alternative D

This alignment serves as a compromise between Alternatives A and B and Alternative C and was designed to improve the speed limit along the northbound and southbound roadways from south of I-235 to south of Cottage Grove Avenue and to attempt to reduce impacts on residential, commercial and apartment properties along this segment of the project (see Figure 3.11).

The design of the northbound and southbound roadways for this alternative provided for the merging of the two one-way roadways south of Cottage Grove Avenue in the vicinity of Crocker Street, then continuing south along the Harding Road corridor as a six-lane, divided roadway as described for Alternative C. The horizontal alignment of the northbound and southbound lanes between Crocker Street and I-235 will allow a speed limit of 35 or 40 mph. Such a design will require the partial widening of 19th Street over I-235, although being less extensive than that required for Alternative C. This alternative is comparable to Alternatives A and B relative to traffic safety and operations.

The provision of a grade separation at Woodland Avenue was also considered for this alternative but was dropped from further consideration as discussed relative to Alternative C. The right-of-way requirements and other impacts would be similar to those for Alternative C.

#### East-West Segment

Additional alternatives for the east-west segment (Alternatives E and F, Figure 3.11) were developed to investigate the use of existing roadways, including 15th and 16th Streets, Mulberry and Cherry Streets, Fifth Avenue and Court Avenue. These alternatives are intended to provide interim continuity until such time as the east-west segment of either Alternative A or B is constructed. Furthermore, these alternatives were not intended to serve as permanent solutions to the traffic problems in the east-west corridor. These alternatives would route eastbound traffic along Ingersoll Avenue to the vicinities of 15th and/or 16th Streets, thence southerly and easterly along existing and proposed new roadway segments to Cherry Street in the vicinity of 13th Street, along Cherry Street from 13th Street to Fifth Avenue and then to and along Court Avenue from Fifth Avenue to the vicinity of E. 14th/S.E. 14th and E. 15th/S.E. 15th Streets. Westbound traffic from the vicinity of the latter streets would

follow Court Avenue to Fifth Avenue and would then proceed to and along Mulberry Street to 13th Street, thence westerly and northerly along new and existing roadway segments to the vicinities of 15th and/or 16th Streets and Ingersoll Avenue and thence westerly along the latter.

Alternative E - Mulberry Cherry Street Extensions to 15th Street (See Figure 3.11).

This interim alternative would incorporate a portion of Alternative A, namely 15th Street from Walnut Street northerly and westerly to the connection with Ingersoll Avenue. Southerly of Walnut Street, this alternative would provide a new three-lane, one-way roadway curving southeasterly along the northerly edge of the Des Moines Union Railroad Company facilities west of 13th Street, joining the alignment of Cherry Street in the vicinity of 13th Street. Beginning at 13th Street, Walnut Street would be extended westerly and northerly via a new three-lane, one-way roadway, which would tie into the northbound lanes of 15th Street as included in Alternative A.

The horizontal alignment of the southbound to eastbound roadway would follow a winding route in order to be located north of the railroad yard area. Due to varying elevations, a retaining wall would be required along the southerly side of the roadway to prevent intrusion of roadway fills into the railroad yard area. This retaining wall would be approximately 950 feet in length.

The three-lane, one-way roadway carrying traffic in the opposite direction would be located to the north of the described roadway. Traffic speeds on each of these roadways would therefore have to be restricted to speed limits of 25 miles per hour.

In order to improve the alignments of these roadways by enlarging curve radii and/or by eliminating curves, additional properties would have to be acquired on the east side of 15th Street to the north of Walnut Street and along the north side of Cherry Street to the east of 13th Street. Thirteenth Street between these two roadways is proposed to be relocated and to be a one-way roadway from Mulberry Street toward Cherry Street.

These extensions of Mulberry and Cherry Streets could be disconnected from 15th Street at Walnut Street in the future if 15th Street was subsequently extended across the railroad yard to the proposed east-west CBD Loop facility in the Market Street corridor. These two extensions, if not abandoned or removed, could then be reconnected to Walnut Street at a location between 13th and 15th Streets.

Ingersoll Avenue is proposed to be removed between the 15th Street Ingersoll Avenue connection of Alternative A and High

Street, whereby 15th Street is proposed to tee into Linden Street from the north and a 90-degree crossing is proposed at the intersection of High Street and 14th Street. Left turns are recommended to be prohibited at Locust Street due to lack of left-turn lane storage for this movement and the corresponding left turn for northbound traffic to Grand Avenue.

This alternative was not consistent with the land-use planning for the CBD area and for the city. It did not meet the project need to relieve traffic congestion in the CBD area.

Alternative F - 16th Street/Cherry Street and 15th Street/Mulberry Street Connections (See Figure 3.11).

This interim alternative would provide for the northerly and westerly extensions of 15th and 16th Streets north of Grand Avenue with connections to the westbound and eastbound lanes of Ingersoll Avenue, respectively. Each of these new one-way roadways would have horizontal curves which would restrict speed limits to 25 mph. As in the previous alternative, Ingersoll Avenue is proposed to be removed from the 15th Street-Ingersoll Avenue connection to High Street, with the proposed tee intersection at 15th and Linden Streets and the full intersection at High and 14th Streets.

Southerly of Locust Street, 16th Street is proposed to be constructed to curve southeasterly on a winding course along the north side of the Des Moines Union Railroad Company facilities and tie into Cherry Street at 13th Street. This new three-lane, one-way roadway and would require a speed limit of 25 mph. This alternative would require a retaining wall approximately 950 feet long.

Mulberry Street, as part of this alternative, is proposed to be extended via a new three-lane, one-way roadway westerly and northerly from 13th Street, tying into 15th Street to the north of Walnut Street. This roadway would have a maximum speed limit of 25 mph. As part of this alternative, 16th Street is proposed to be relocated northerly of Market Street to intersect with the two one-way roadways in the vicinity of its proposed connection to Walnut Street. It would cross the existing railroad tracks at-grade.

To improve the alignments of these two roadway extensions would have required the acquisition of additional properties on the east side of 15th Street to the north of Walnut Street, on the easterly side of 16th Street to the north of Locust Street and on the north side of Cherry Street east of 13th Street.



The extensions of Mulberry and Cherry Streets could be disconnected from the northerly portions of the extensions of 15th and 16th Streets in the vicinity of Walnut Street, at which location 15th and 16th Streets could be extended southerly and merged to cross over the railroad yards and then curve easterly to join Alternative A of the east-west segment of the CBD Loop if such facility were constructed in the future. The westerly extensions of Mulberry and Cherry Streets, as in the previous alternative, could either be removed or curved northerly to tie into Walnut Street at some point between 13th and 15th Streets.

This alternative would not require the prohibition of left turns onto Locust Avenue from the eastbound roadway due to the one-way couplet feature of use of 15th and 16th Streets. As such, this alternative would provide better traffic circulation than Alternative A or the previously described Alternative F. It would not be consistent with land-use planning for the CBD area, however.

Mulberry-Cherry Street One-Way Couplet (See Figure 3.11) Extension of Either Alternatives E or F.

As part of either interim Alternatives E or F, existing Cherry Street was proposed to be converted from a two-way to a one-way roadway, with traffic moving from 13th Street toward Fifth Avenue, at which location it would curve northeasterly and then easterly to tie into the southerly half of Court Avenue. Court Avenue was proposed to become a two-way street using the existing roadway. Existing on-street parking would be removed along Cherry Street and Court Avenue as part of this alternative. Traffic flow along Mulberry Street would be changed from one-way eastbound to one-way westbound, with traffic thereby traveling from Fifth Avenue toward 13th Street. The westbound lanes of Court Avenue would curve northwesterly and then westerly in the vicinity of Fifth Avenue to tie into Mulberry Street.

Traffic movements at the Fifth Avenue intersections with the one-way Mulberry and Cherry Street and two-way Court Avenue roadways were expected to result in numerous vehicle and pedestrian delays as Fifth Avenue is a one-way southbound street toward Mulberry Street and Fifth Avenue south of Cherry Street is a two-way street. One of two options was available relative to Fifth Avenue connections. In the first option, southbound Fifth Avenue traffic approaching Mulberry Street could be permitted to turn west onto Mulberry Street or to cross Mulberry Street and then turn east onto Court Avenue or cross Cherry Street and proceed south. Northbound Fifth Avenue traffic approaching Cherry Street would be required to turn east onto Court Avenue as part of this option. As part of the second option, southbound traffic on Fifth Avenue would be required to turn west onto Mulberry Street, whereby motorists destined to eastbound Court Avenue could turn

south via Sixth Avenue to Cherry Street and then turn east onto Cherry Street. Northbound Fifth Avenue traffic approaching Cherry Street would be permitted to either turn east onto Court Avenue or to cross Cherry Street and turn west onto Mulberry Street.

In order to provide even minimally acceptable curve radii for the junctions of the two one-way roadways at their connections with Court Avenue, the northeast and southeast corners of the Courthouse property would have to be acquired, resulting in loss of on-street and off-street parking on and around the courthouse property. In addition, property would have to be acquired from the bank property at the southeast corner and from the City Parking Ramp property at the northeast corner of Court and Fifth Avenues. Such street modifications would bring traffic into closer proximity to the Courthouse and Parking Ramp facilities.

The reversal of one-way traffic flow on Mulberry Street would require extensive modifications to the entrance to the city's Mulberry Street Parking Ramp, as the current entrance is oriented relative to the existing one-way traffic flow direction. Furthermore northbound traffic approaching the business district via S.W. Eighth Street would no longer be able to turn right onto Mulberry Street and then right into this parking facility but must travel north to Locust Street, proceed east to Seventh Street and south on Seventh Street, and then turn west onto Mulberry Street, with an extra travel distance of approximately six city blocks (3/8 mile). (Walnut Street is proposed to become a transit mall and will therefore be closed to other traffic.) The reversal of traffic flow along Mulberry Street would also require modifications in traffic signals, traffic signs and pavement markings and adversely affect the current placement of some building and business signs.

The parking facility for the Financial Center, located at the northeast corner of Mulberry and Seventh Streets, currently discharges traffic parallel to Mulberry Street and such exiting traffic merges with the existing eastbound traffic flow on Mulberry Street via a driveway (see Figure 7). With the proposed reversal of traffic flow on Mulberry Street, vehicles exiting from this parking facility would have to make a U-turn, in effect, to get onto Mulberry Street, with no other street connections being possible.

A drive-through bank facility located on Mulberry Street at mid-block and immediately east of the Financial Center, is oriented with the existing traffic flow direction of Mulberry Street. The reversal of traffic flow on Mulberry Street would necessitate the relocation of equipment of the drive-through banking facility.

The headquarters of the Des Moines Fire Department is located on the south side of Mulberry Street and west of S.W. Ninth Street, the latter street being a one-way southbound street. With the proposed reversal of traffic on Mulberry Street, all fire trucks must turn west onto Mulberry Street. In order for the fire department to respond to calls south of the business district along the main arterial of S.W. Ninth Street, an extra three and one-half blocks of travel would be necessary via Mulberry, 10th Street, Walnut Street and Ninth Street (see Figure 6). Responses of the Fire Department to calls north and east of this fire station would also be adversely affected by the reversal of traffic flow on Mulberry Street. Emergency vehicles would be permitted to use Walnut Street within the proposed transit mall area.

Cherry Street passes under viaducts at S.W. Ninth, Eighth and Seventh Streets. Two-way surface roadways under these viaducts currently tie into Cherry Street from the south via tee intersections. One-lane, one-way surface streets are currently provided between Cherry and Mulberry Streets adjacent to the approaches to the S.W. Ninth and Eighth Street viaducts, although none is provided at S.W. Seventh Street. Southwest Ninth Street, the S.W. Ninth Street viaduct and the surface street to the east of the north viaduct approach are one-way southbound roadways. Southwest Eighth Street, the S.W. Eighth Street viaduct and the surface street to the west of the north viaduct approach are one-way northbound roadways. The S.W. Seventh Street viaduct is a two-way facility, whereby S.W. Seventh Street to the north of Mulberry Street is a one-way southbound street. The one-lane, one-way surface streets between Mulberry and Cherry Streets would be more extensively used with the one-way couplet concept than under current conditions in order to provide for traffic circulation between the two one-way streets. This would increase traffic congestion in the vicinity of the viaducts.

Further traffic circulation problems are anticipated in the vicinity of the Courthouse, where a new county jail facility is located on the west side of Sixth Avenue and north of Cherry Street and the Mulberry Street Parking Ramp exit connects to Sixth Avenue between Mulberry and Cherry Streets.

Court Avenue from Fifth Avenue to E. 15th Street (See Figure 3.11) Extension of Either Alternatives E or F.

Court Avenue is currently a one-way eastbound street from Fifth Avenue to Kasson Street and a two-way street east of Kasson Street. As part of this interim alternative, Court Avenue would become a two-way street easterly of Fifth Avenue. The existing street provides for four lanes of traffic and two parking lanes



from Fifth Avenue to E. Third Street, three lanes of traffic and two parking lanes from E. Third to E. Sixth Streets, three traffic lanes and one parking lane from E. Seventh and four traffic lanes from E. Seventh to Kasson Street. The left lane is required to turn left onto Kasson Street and the next lane to the right is required to turn left onto Finkbine Drive. The remaining two lanes continue eastbound adjacent to the two westbound lanes on Court Avenue east of Kasson Street and Finkbine Drive. Kasson Street is a one-way westbound roadway from Court Avenue toward E. Walnut Street, while Finkbine Drive is a two-way street.

The exit from the city's Parking Ramp at the northeast corner of Fifth and Court Avenues is constructed to direct traffic eastbound onto Court Avenue, which street currently is a one-way eastbound facility. It is expected that modifications of this exit would be necessary upon changing Court Avenue to a two-way roadway. Left turns from this parking ramp onto two-way Court Avenue would increase the accident potential at this location.

A gate-controlled parking lot entrance to the north of Court Avenue is located approximately 50 feet east of Second Avenue. Upon the conversion of Court Avenue to a two-way street, eastbound traffic wishing to turn left into this parking lot and waiting for the passage of oncoming vehicles would pose a traffic safety and congestion problem not currently occurring. In addition, the use of the Mulberry-Cherry-Court alternative as the main east-west transportation corridor was expected to result in increased truck traffic on streets in this corridor. This condition would constitute a negative impact on the present and intended future use of the area.

The existing connection for the left turning movement from westbound E. Court Avenue to Kasson Street would have to be closed when E. Court Avenue becomes a two-way street. In addition, the existing traffic island to the east of this left-turn connection would have to be modified to provide four traffic lanes on E. Court Avenue.

This alternative also included the proposed realignment of E. Court Avenue from the vicinity of E. 13th Street to E. 14th Street to improve the horizontal alignment approaching the intersection at E. 14th Street.

#### Indianola Avenue Connection

#### Alternative G - S.W. First/S.E. First Street Connection to Indianola Avenue (See Figure 3.11).

This alternative provides connections from the one-way couplets of S.W. Second and Third Streets from north of Elm Street

to an intersection of S.E. First Street and Indianola Avenue and is in addition to the southerly extensions of these two one-way streets via the Indianola Avenue connection that is presented for Alternatives A and B.

S.E. First Street was proposed to be widened to a four-lane roadway from Indianola Avenue to the existing two-lane bridge over the Raccoon River. This existing bridge was proposed to be widened to a four-lane bridge. North of this bridge, a four-lane pavement was proposed to extend in a northwesterly direction to the vicinity of the existing intersection of S.W. First Street and Riverside Drive. At a point approximately 500 feet northwest of this location, the northbound lanes would curve to the north to tie in to existing S.W. Second Street to the north of Elm Street. The southbound lanes would continue further to the northwest and curve to the north to connect to S.W. Third Street at Market Street.

The roadway for northbound and southbound traffic would be a divided, four-lane roadway that would diagonally cross a one-block area of Riverside Park that is located south of Elm Street and north of Sec Taylor Stadium. It was proposed that S.W. First Street be extended southwesterly from the vicinity of Elm Street, cross the proposed new S.W. Second and S.W. Third Street extensions and then curve to tie into S.W. Second Street approximately one block south of Elm Street. Elm Street would extend northeasterly from S.W. Third Street, cross the new S.W. Third Street extension and connect to S.W. Second Street approximately one-half block north of Elm Street. Scott Avenue would tie into the proposed four-lane roadway south of the Raccoon River. The proposed roadway would cross the Chicago & North Western Transportation Company track at-grade.

Indianola Avenue would be widened from S.W. First Street to Hartford Avenue to a four-lane, divided roadway, with additional width in each direction in the vicinity of the intersection with S.E. First Street to accommodate turning movements.

The proposed S.W. First/S.E. First Street roadway would be undivided except northerly of the south access to Sec Taylor Stadium and southerly of E. Edison Avenue to Indianola Avenue. In addition, the new roadway would be widened one lane between E. Edison Avenue and Indianola Avenue, with a transition from two to three lanes southbound occurring between E. Dunham and E. Edison Avenues. The northbound lanes are proposed to be widened to three lanes for approximately 150 feet north of Indianola Avenue and then be reduced in width to two lanes northbound upon reaching E. Edison Avenue. Columbus Avenue would be dead-ended to the west of S.E. First Street.

A retaining wall or retained earth structure would be required along the easterly side of the proposed northbound roadway and northerly of the Raccoon River to prevent encroachment of the roadway slopes into the Des Moines River. Improvements in this area would have to be coordinated with the U.S. Army Corps of Engineers, as such are partially located within the existing flood control facilities.

In contrast to Alternatives A or B, which would pass on the edge of this well-established Italian neighborhood, this alternative would pass through the center of the residential area. It is anticipated that this alternative would be highly controversial and would not be accepted by the neighborhood. This alternative would require the acquisition of 12 single-family dwellings, 11 commercial structures and the headquarters of two Italian benevolent organizations. It would have significantly more negative impact on the residential neighborhood than would either Alternatives A or B, which would displace only five single-family dwellings, one apartment and two commercial structures.

#### Alignment Variation in Elm Street Corridor

As a result of the 1985 study of archaeological resources in the Elm Street corridor and because of recent commercial developments in the area, the city staff recommended a southerly shift of the original alignment of Alternatives A, B and the Preferred alternative. This alignment variation involves the portion of the east-west segment of the CBD Loop Arterial between S.W. Ninth Street and S.W. First Street. The eastbound and westbound lanes curve toward Elm Street immediately east of S.W. Ninth Street and become aligned with the existing Elm Street pavement at S.W. Fifth Street and to the east (Plate 8, Appendix C).

This variation is different from that presented in the Draft EIS in that the latter was located generally north of Elm Street west of S.W. Second Street (Plate 12, Appendix D). As a result, Elm Street would have remained open from S.W. Ninth Street to a proposed cul-de-sac east of S.W. Fourth Street but would be closed east of S.W. Sixth Street for the revised alignment. The revised alignment will provide ramp connections to the S.W. Eighth and S.W. Ninth Street viaducts and intersections at S.W. First, S.W. Second, S.W. Third and S.W. Fifth Streets, as were also included in the original concept.

#### Modification of Interchange in the Des Moines Water Works

Subsequent to the Draft EIS and the public hearing, the Des Moines Water Works advised the city staff of their plans for the expansion of their water collection and treatment facilities in



the area north of their existing facilities. Portions of these proposed facilities would have been located entirely or partially within the proposed interchange.

In an effort to avoid conflicts with these future expansions, several alternatives were developed for this interchange in the vicinity of the Water Works. Figure 3.12 includes schematic diagrams of various interchange layouts. Layouts A and B provide connections to the east-west segment to the east of Fleur Drive at the north side of the Raccoon River, while the remaining layouts provide realignments of the east-west segment westerly of S.W. 14th Street. Highest traffic demands are from northbound Fleur Drive to the northbound CBD Loop and the opposing southbound movement. Based on the abilities of the various interchange layouts to efficiently accommodate the major traffic movements, the potential for staging the various improvements, the cost of construction and driver expectancy, Layout G was selected for further development. The latter is shown in more detail in Figure 5.8 (Chapter 5).

#### Modification of E. 15th Street Extension and S.E. 14th Street Improvements

The proposed improvements for the E. 15th Street Extension provide for an earthen embankment between the structure overpassing the Chicago & North Western Transportation Company and other trackage to the north and the structure overpassing the Burlington Northern railroad track and the east-west segment of the arterial. Because this design would have required the filling of a wetland area, an alternative was investigated to reduce the effects on this wetland. This variation involves the construction of one viaduct and the elimination of earthen embankment (Plate 11, Appendix C).

The other alignment modification was proposed to reduce impacts to Hawthorn Park along the west side of S.E. 14th Street. This modification provides for pavement width transitions immediately south of Maury Street and for conversion of the existing two-way street to a one-way southbound street from south of the width transition near Maury Street to the north end of the bridge over the Des Moines River (Plate 12, Appendix C).

#### BASIS FOR SELECTION OF PREFERRED ALTERNATIVE

After review of the Draft Environmental Impact Statement, the report on "Concept Evaluation of Additional Alternates," the public hearing transcript, comments received from the public and agencies, and the input received at the public information meetings held in 1985, the Des Moines City Council selected a preferred alternative in February, 1985. This alternative was selected for the reasons described in the following paragraphs.

### North-South Segment

The original concept of Alternatives A and B was selected for the segment between I-235 and approximately Center Street. Although this concept would require the displacement of one additional business and several additional residences compared to Alternatives C or D, the benefits from improved traffic operation would outweigh these adverse effects. Traffic operations would be improved at the intersections with Cottage Grove and in the transition from one-way 19th Street and Harding Road at I-235 to two-way Harding Road south of Center Street. The original concept would also allow for the connection of Olive Street west of Harding Road to provide access to that portion of the Woodland Willkie area north and west of Woodland Cemetery. It would not require the modification of I-235 bridges as proposed in Alternatives C and D.

From Center Street south to Fleur Drive, the Preferred alternative would utilize the Harding Road modification contained in both Alternatives C and D. This would greatly reduce the number of properties displaced and also would reduce the impacts to the businesses along Harding Road near Ingersoll Avenue and at Grand Avenue. It would also impact fewer historic properties that are considered contributing to the significance of the Sherman Hill Historic District and be further shifted to the west away from this district and the neighborhood. It would not require the taking of a potential National Register historic structure as would Alternatives A and B.

### East-West Segment

The original concept of Alternative B was selected as the Preferred alternative for the east-west segment. This alternative would provide improved traffic flow and much better access to the underdeveloped industrial area south of the CBD than would any of the other concepts. This alternative would also displace considerably fewer businesses than would the other alternatives. After its selection, the original concept of this alternative was modified in the Des Moines Water Works to minimize the impacts to this facility. This revision also eliminated the need for the 15th Street-Tuttle Street Extension.

### Indianola Avenue Connection

The original concept for this connection that was presented in the Draft EIS was selected. The other alternative (Alternative G) considered subsequent to the Draft EIS proved to be too disruptive to the neighborhood and too costly.

### E. 15th Street Extension

The original concept for this connection that was presented in the Draft EIS was selected with slight design modifications in a wetland area and adjacent to a park. No other alignment alternatives were considered for this segment.

#### Other Considerations

The Preferred Alternative would have fewer impacts to Section 4(f) properties than would the other alternatives (Table 3.4). It would also displace slightly fewer buildings than would the other alternatives (Table 3.1) and would be less expensive (Tables 3.2 and 3.3).

Rep/Dm2/AA5



TABLE 3.1  
BUILDING DISPLACEMENTS FOR ALTERNATIVES OF THE  
DES MOINES CBD LOOP ARTERIAL

Displacements								
Alternative	Single-Family Dwelling	Apartments	Warehouses	Commercial	Churches & Community Centers	City-Owned Buildings	Garage	Total
<u>North-South Segment</u>								
1A, 1B	25	16		32**		2	1	76
2A, 2B	20	14		24**		2	1	61
C	13	7		12		2		34
D	12	7		14		2		35
Preferred	16	11		17**		2		46
<u>East-West Segment (West of Des Moines River)</u>								
A			7	12***				19
B & Preferred			6	5				11
E*			1	7				8
F*				7				7
<u>East-West Segment (East of Des Moines River)</u>								
A, B & Preferred	31		1	9				41
E*								0
F*								0
<u>Indianola Avenue Connection</u>								
A, B & Preferred	5	1		5	1	2		14
G	12	0		11	1	0		24
<u>E. 15th Street Extension</u>								
A, B & Preferred	19	1		6	4	0		30
<b>TOTALS</b>								
Alternative 1A	80	18	8	63	5	4	2	180
Alternative 2A	75	16	8	55	5	4	2	165
Alternative 1B	80	18	7	56	5	4	2	172
Alternative 2B	75	16	7	48	5	4	2	157
Preferred Alternative	71	13	7	41	5	4	1	142

\*Interim Solutions - The ultimate displacement impacts will be same as Alternatives A or B.

\*\*Includes three commercial buildings that have apartments upstairs.

\*\*\*Includes one commercial building that has apartments upstairs.

Rep/Dm2/AE9

TABLE 3.2  
COMPARISON OF ALTERNATIVES  
COSTABLE FACTORS

	North-South Segment					East-West Segment			W. 15th St. Extension	Indianola Avenue Connection	E. 15th St. Connection	Totals				
	Subalternative					Alternative			Alternative			Subalternative				
	1A	2A	1B	2B	Preferred	A	B	Preferred	B	A, B and Preferred	A, B and Preferred	1A	2A	1B	2B	Preferred
Length (Miles)	1.5	1.5	1.5	1.5	1.5	2.6	2.9	2.8	0.3	0.7	1.0	5.8	5.8	6.4	6.4	6.0
Road-User Cost Savings*												\$12,761,000	\$12,761,100	\$10,364,000	\$10,364,000	\$10,368,000
Construction Costs:																
Grading/Drainage	\$ 1,673,200	\$ 1,400,500	\$ 1,823,700	\$ 1,527,700	\$ 2,477,800	\$ 2,138,200	\$ 2,097,700	\$ 2,117,200	\$ 309,100	\$ 555,300	\$ 1,043,700	5,410,400	5,137,700	5,829,500	5,533,500	6,194,000
Pavement	1,533,400	1,793,100	1,623,100	1,862,500	1,847,500	2,858,700	2,723,600	2,671,000	290,900	784,800	1,281,900	6,458,800	6,718,500	6,704,300	6,943,700	6,585,200
Structures	6,867,000	5,211,900	8,851,200	7,570,100	7,421,400	7,722,400	9,622,900	7,199,000	1,466,900	1,674,300	4,166,700	20,430,400	18,775,300	25,782,000	24,500,900	20,461,400
Noise Walls	335,000	335,000	335,000	335,000	360,000	---	---	---	---	---	---	335,000	335,000	335,000	335,000	360,000
Railroad Relocation	---	---	---	---	---	625,000	1,761,500	625,000	---	---	27,000	652,000	652,000	1,788,500	1,788,500	652,000
Utility Adjustments	590,000	540,000	622,000	572,000	572,000	741,000	735,000	735,000	---	112,000	123,000	1,566,000	1,516,000	1,592,000	1,542,000	1,542,000
Miscellaneous	1,133,400	1,104,900	1,181,400	1,144,200	1,336,200	1,608,500	1,534,500	1,527,800	126,500	384,700	568,800	3,695,400	3,666,900	3,795,900	3,758,700	3,817,500
Total Construction Cost	\$12,132,000	\$10,385,400	\$14,436,400	\$13,011,500	\$14,014,900	\$15,693,800	\$18,475,200	\$14,875,000	\$2,193,400	\$3,511,100	\$ 7,211,100	\$38,548,000	\$36,801,400	\$45,827,200	\$44,402,300	\$39,612,100
Other Costs:																
Engineering, Legal, Administrative and Contingencies	2,426,400	2,077,100	2,887,400	2,602,300	2,803,000	3,138,800	3,695,000	2,975,000	439,000	703,000	1,442,200	7,710,400	7,361,100	9,166,600	8,881,500	7,923,200
Right-of-Way	10,257,000	8,404,000	10,257,000	8,404,000	5,160,000	7,998,000	5,982,600	7,065,200	485,100	1,360,000	1,963,000	21,589,000	19,730,000	20,052,700	18,199,700	15,553,200
Relocation Assistance	2,618,000	2,014,000	2,618,000	2,014,000	1,528,000	1,990,000	1,560,000	1,660,000	50,000	398,000	970,000	5,976,000	5,372,000	5,596,000	4,992,000	4,556,000
TOTAL COSTS**	\$27,433,400	\$22,880,500	\$30,198,800	\$26,031,800	\$23,505,900	\$28,820,600	\$29,712,800	\$26,575,200	\$3,167,500	\$5,972,100	\$11,591,300	\$73,817,400	\$69,264,500	\$80,642,500	\$76,475,500	\$67,644,500

\*Road-user cost savings of alternatives as compared with "No Action" alternative.

\*\*Total costs do not include costs for some mitigation measures, such as archaeological mitigation, that are not known at this time.

NOTE: Estimated costs are based on 1985 cost data.

TABLE 3.3

## ESTIMATED PROJECT COSTS FOR VARIOUS SECTIONS OF THE PROJECT

Stage		Alternative A		Alternative B		Preferred Alternative
		Subalternative				
From	To	1A	2A	1B	2B	
<u>N-S Segment CBD:</u>						
I-235	Ingersoll Ave.	\$12,789,400	\$10,935,800	\$12,789,400	\$10,395,200	\$ 8,814,000
Ingersoll Ave.	Fleur Drive	14,644,000	11,944,700	17,409,400	15,636,600	14,691,900
<u>E-W Segment CBD:</u>						
N-S Segment CBD	S.W. First Street	20,009,900	20,009,900	21,902,100	21,902,100	17,764,500
S.W. First Street	S.E. 14th St./ E. 15th St. Ext.	8,810,700	8,810,700	8,810,700	8,810,700	8,810,700
<u>W. 15th Street Extension:</u>						
Walnut Street	Tuttle St. Ext.	---	---	3,167,500	3,167,500	---
<u>Indianola Avenue Connection:</u>						
E-W CBD	Indianola Ave.	5,822,100	5,822,100	5,822,100	5,822,100	5,822,100
<u>E. 15th Street Extension:</u>						
North of E. Walnut Street	Des Moines River	<u>11,591,300</u>	<u>11,591,300</u>	<u>11,591,300</u>	<u>11,591,300</u>	<u>11,591,300</u>
SUBTOTALS		\$73,817,400	\$69,264,500	\$80,642,500	\$76,475,500	\$67,644,500
Street Widening		<u>3,460,000</u>	<u>3,460,000</u>	<u>3,460,000</u>	<u>3,460,000</u>	<u>3,460,000</u>
TOTALS		<u>\$77,277,400</u>	<u>\$72,724,500</u>	<u>\$84,102,500</u>	<u>\$79,935,500</u>	<u>\$71,104,500</u>

NOTE: Estimated costs are based on 1985 cost data.

Rep/Dm2/AF1

TABLE 3.4

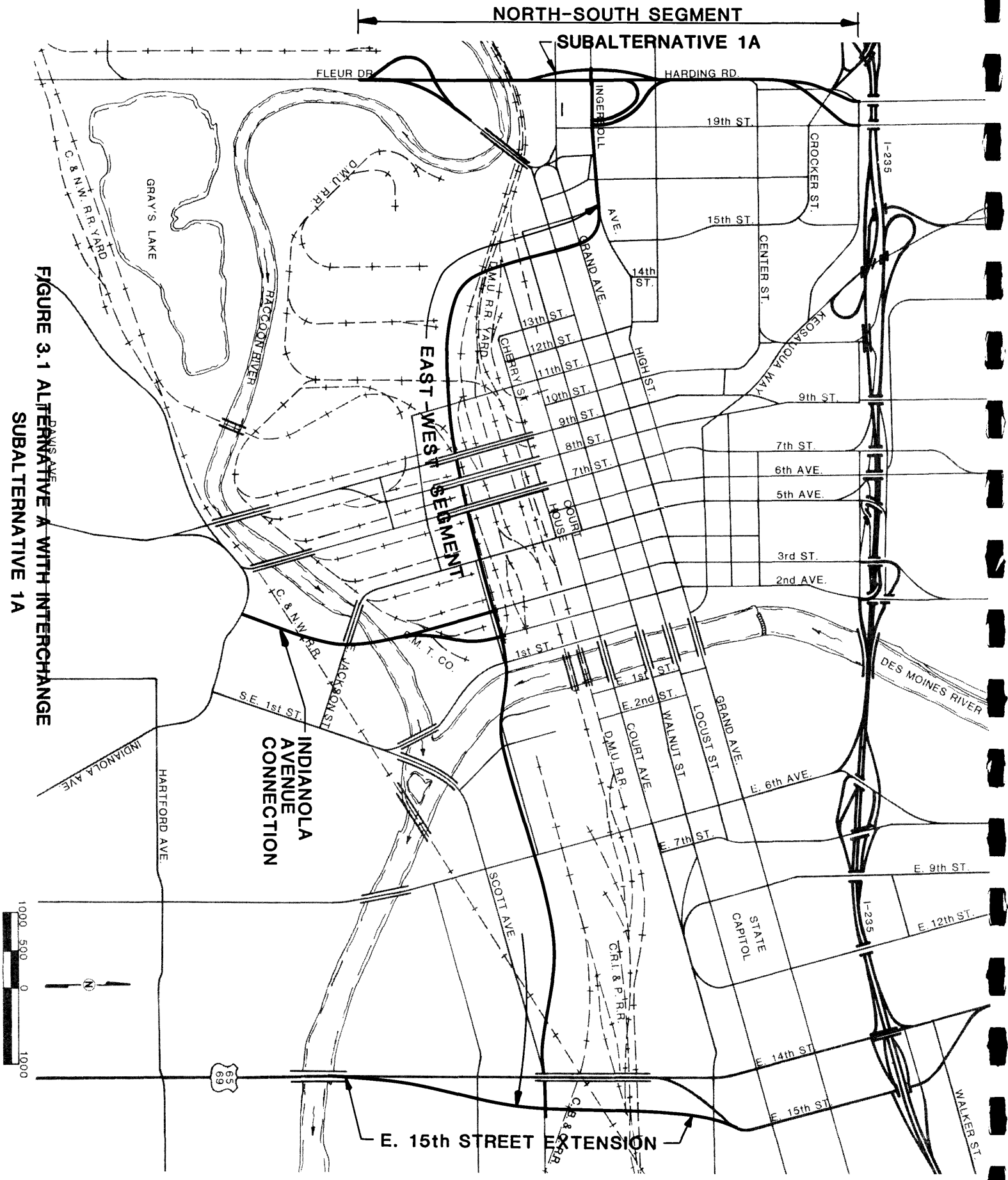
SUMMARY OF SECTION 4(f) IMPACTS OF THE  
MAJOR ALTERNATIVES CONSIDERED

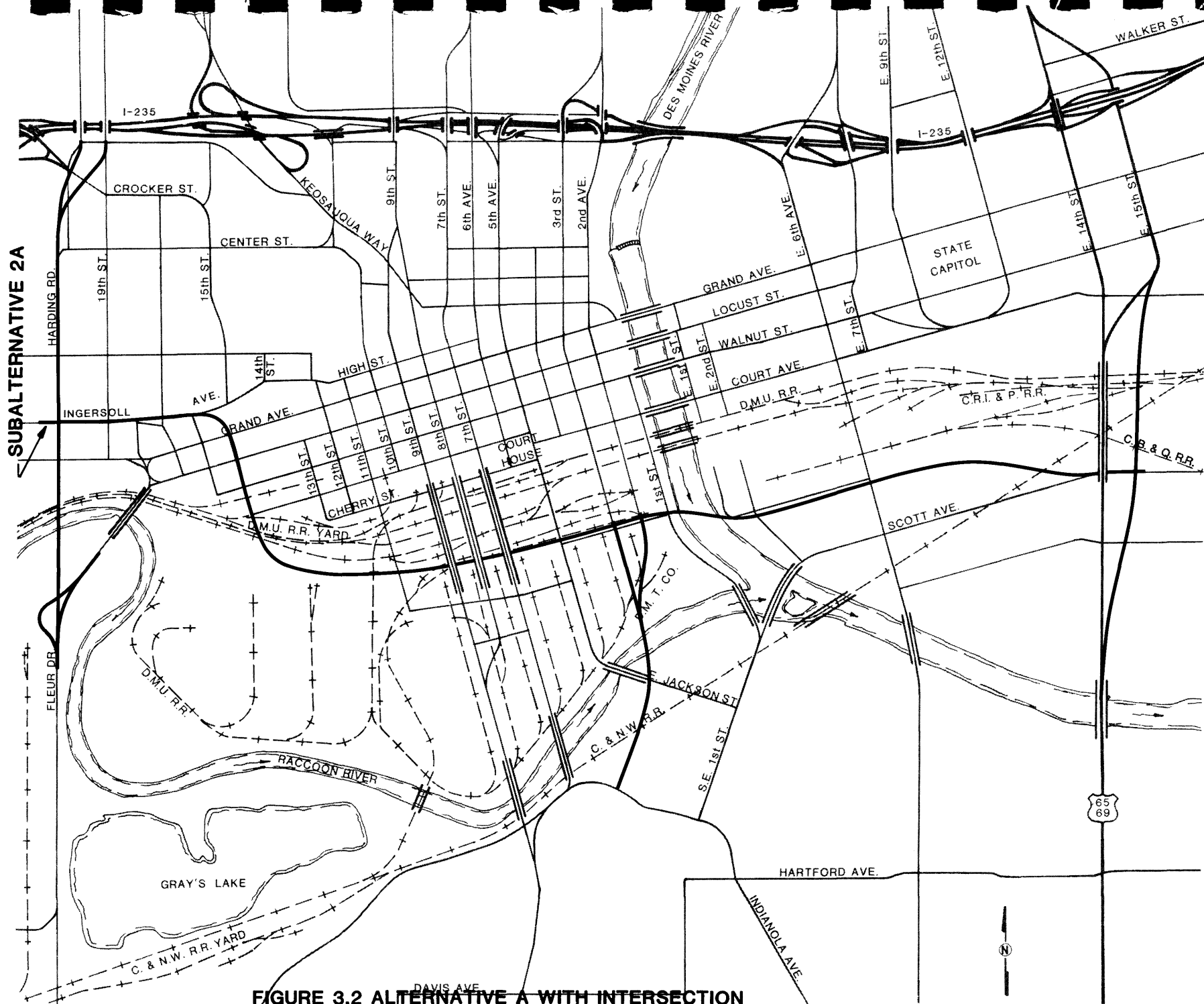
Section 4(f) Impact	Alternative				
	1A	2A	1B	2B	Preferred
Number of National Register Eligible Structures Displaced	5	4	4	3	2
Number of National Register Eligible Contributing Structures Displaced	31	27	31	27	23
Shifts Woodland Cemetery Entrance	Yes	Yes	Yes	Yes	Yes
Intrusion Into Northwest Corner of Sherman Hill Historic District	Yes	Yes	Yes	Yes	Yes
Passes Through Archaeological Site 13PK61	Yes	Yes	Yes	Yes	Yes
Requires 1.2 Acres From the River Front Open Space Areas	Yes	Yes	Yes	Yes	Yes
Requires .3 Acre From Sam Cohen Park	Yes	Yes	Yes	Yes	Yes
Requires .8 Acre From Riverside Park	Yes	Yes	Yes	Yes	Yes
Land Required From Water Works Park in Acres	7	7	17	17	12.5
Land Required From Hawthorn Park in Acres	.1	.1	.1	.1	0
Land Required From Chamberlain Park in Ft <sup>2</sup>	50	0	50	0	0

Rep/Dm2/AG1



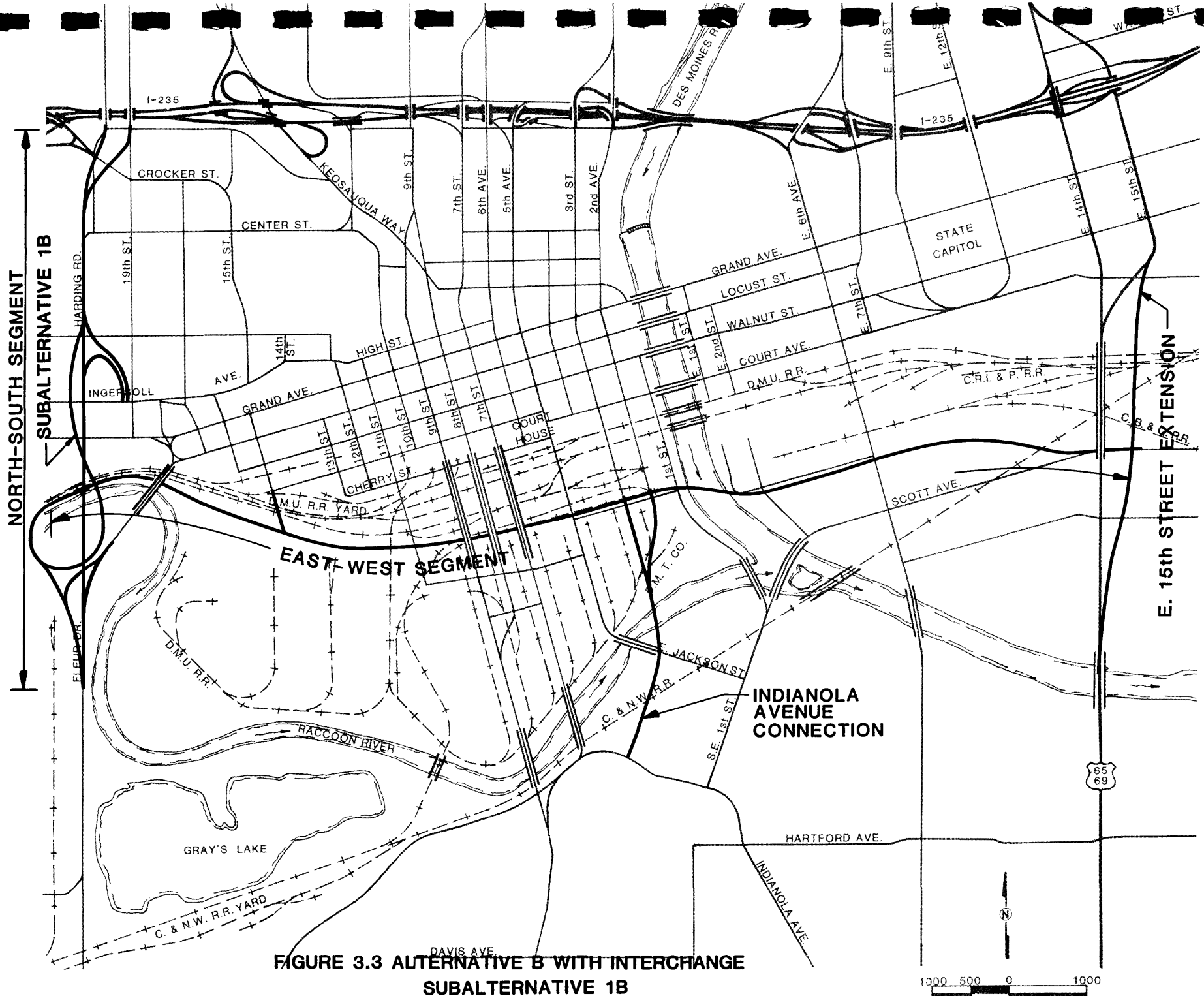
**FIGURE 3.1 ALTERNATIVE A WITH INTERCHANGE  
SUBALTERNATIVE 1A**





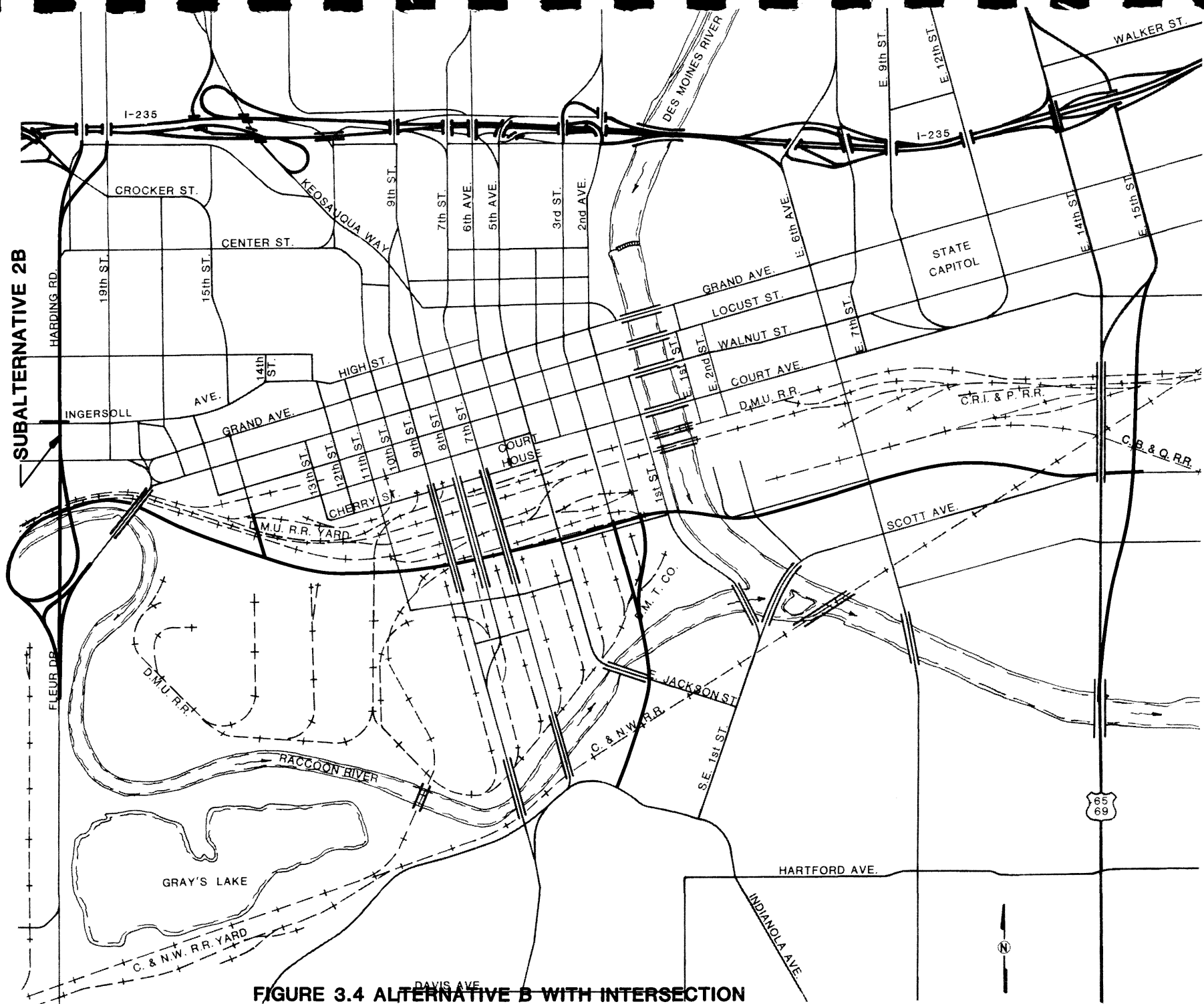
**FIGURE 3.2 ALTERNATIVE A WITH INTERSECTION  
SUBALTERNATIVE 2A**

1000 500 0 1000



**FIGURE 3.3 ALTERNATIVE B WITH INTERCHANGE  
SUBALTERNATIVE 1B**

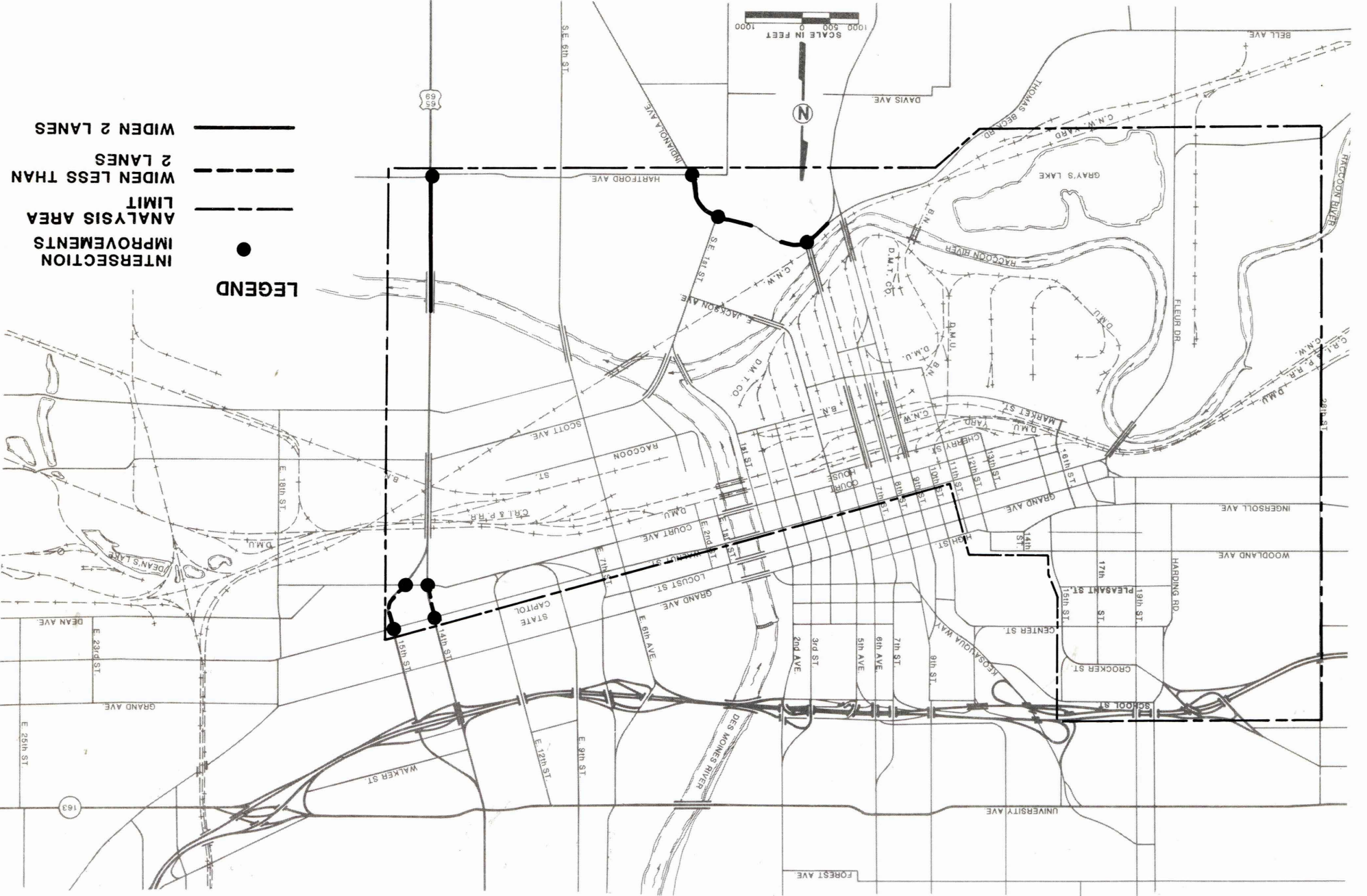


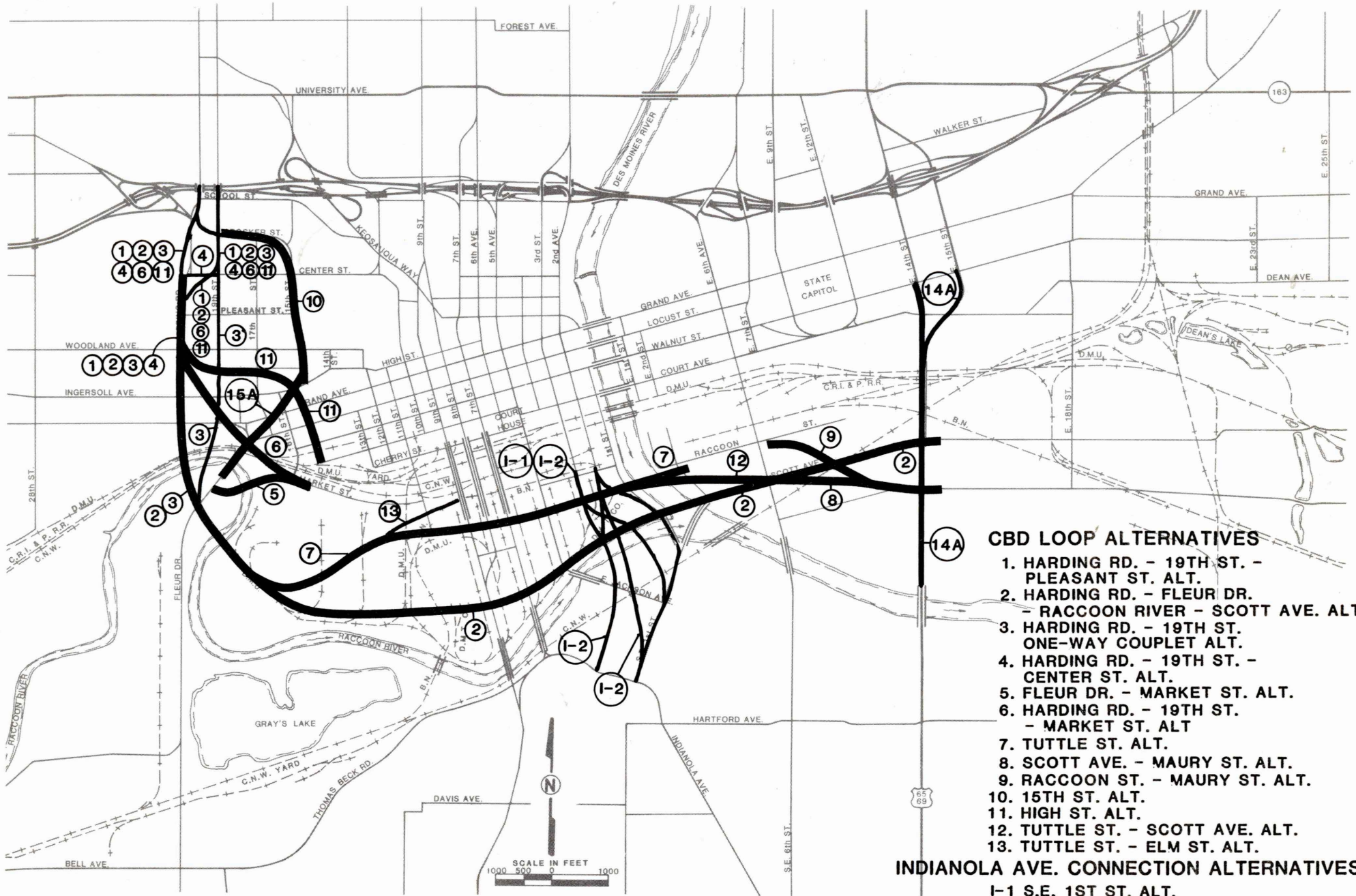


**FIGURE 3.4 ALTERNATIVE B WITH INTERSECTION SUBALTERNATIVE 2B**



FIGURE 3.6 FUTURE STREET IMPROVEMENT PROJECTS





**FIGURE 3.7 ALTERNATIVES CONSIDERED PARTIALLY EVALUATED & DELETED FROM FURTHER CONSIDERATION**

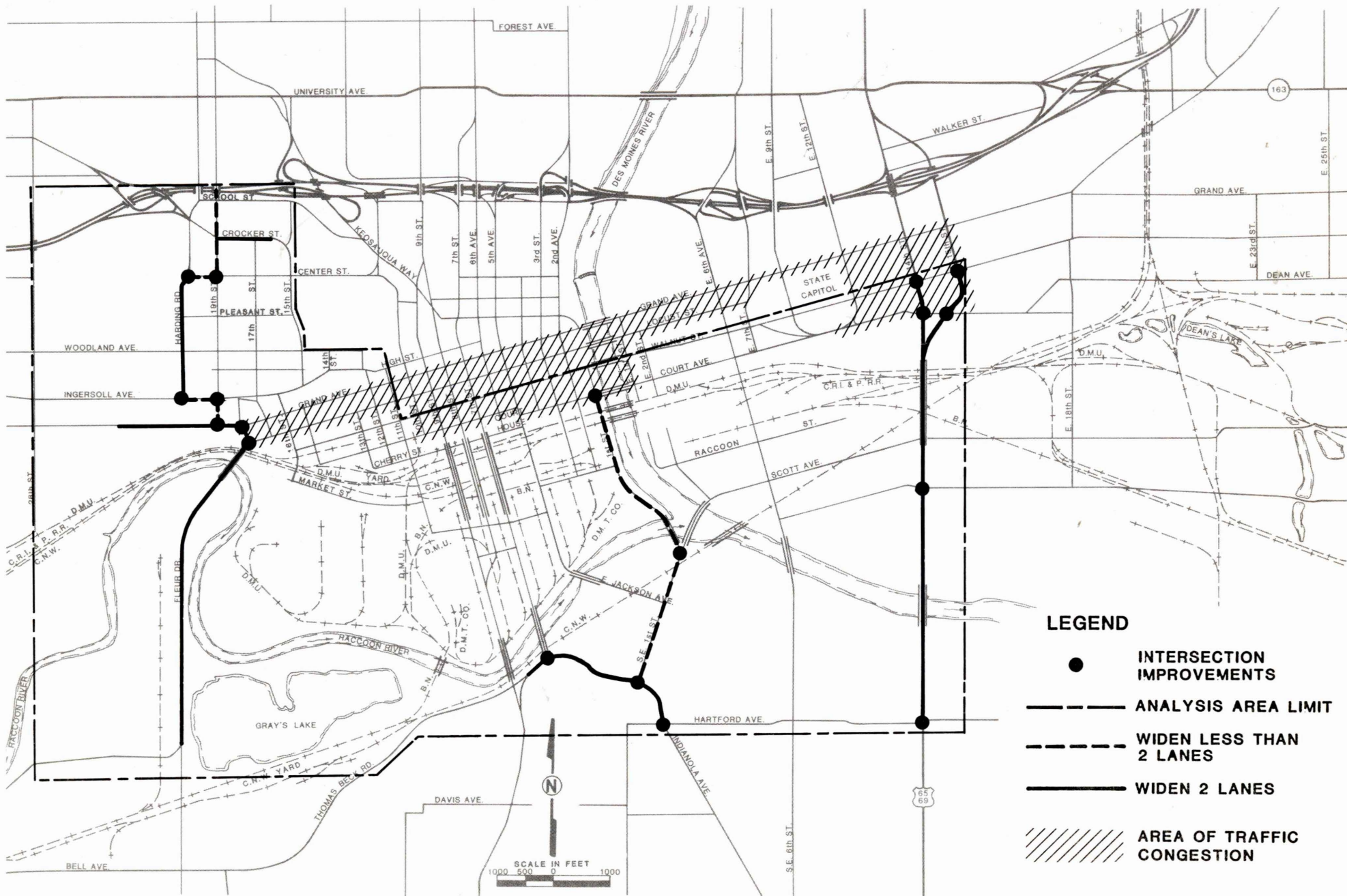
**CBD LOOP ALTERNATIVES**

- 1. HARDING RD. - 19TH ST. - PLEASANT ST. ALT.
- 2. HARDING RD. - FLEUR DR. - RACCOON RIVER - SCOTT AVE. ALT.
- 3. HARDING RD. - 19TH ST. ONE-WAY COUPLET ALT.
- 4. HARDING RD. - 19TH ST. - CENTER ST. ALT.
- 5. FLEUR DR. - MARKET ST. ALT.
- 6. HARDING RD. - 19TH ST. - MARKET ST. ALT
- 7. TUTTLE ST. ALT.
- 8. SCOTT AVE. - MAURY ST. ALT.
- 9. RACCOON ST. - MAURY ST. ALT.
- 10. 15TH ST. ALT.
- 11. HIGH ST. ALT.
- 12. TUTTLE ST. - SCOTT AVE. ALT.
- 13. TUTTLE ST. - ELM ST. ALT.

**INDIANOLA AVE. CONNECTION ALTERNATIVES**

- I-1 S.E. 1ST ST. ALT.
- I-2 S.W. 1ST - S.E. 1ST ST. ALT.
- S.E. 14TH - 15TH ST. ALTERNATIVES
- 14A S.E. 1ST ST. ALT.
- 15TH ST. CONNECTION ALTERNATIVES
- 15A FLEUR DR. - 15TH ST. ALT.





- LEGEND**
- INTERSECTION IMPROVEMENTS
  - ANALYSIS AREA LIMIT
  - - - WIDEN LESS THAN 2 LANES
  - WIDEN 2 LANES
  - ▨ AREA OF TRAFFIC CONGESTION

**FIGURE 3.8 STREET WIDENING ALTERNATIVE SW-1**

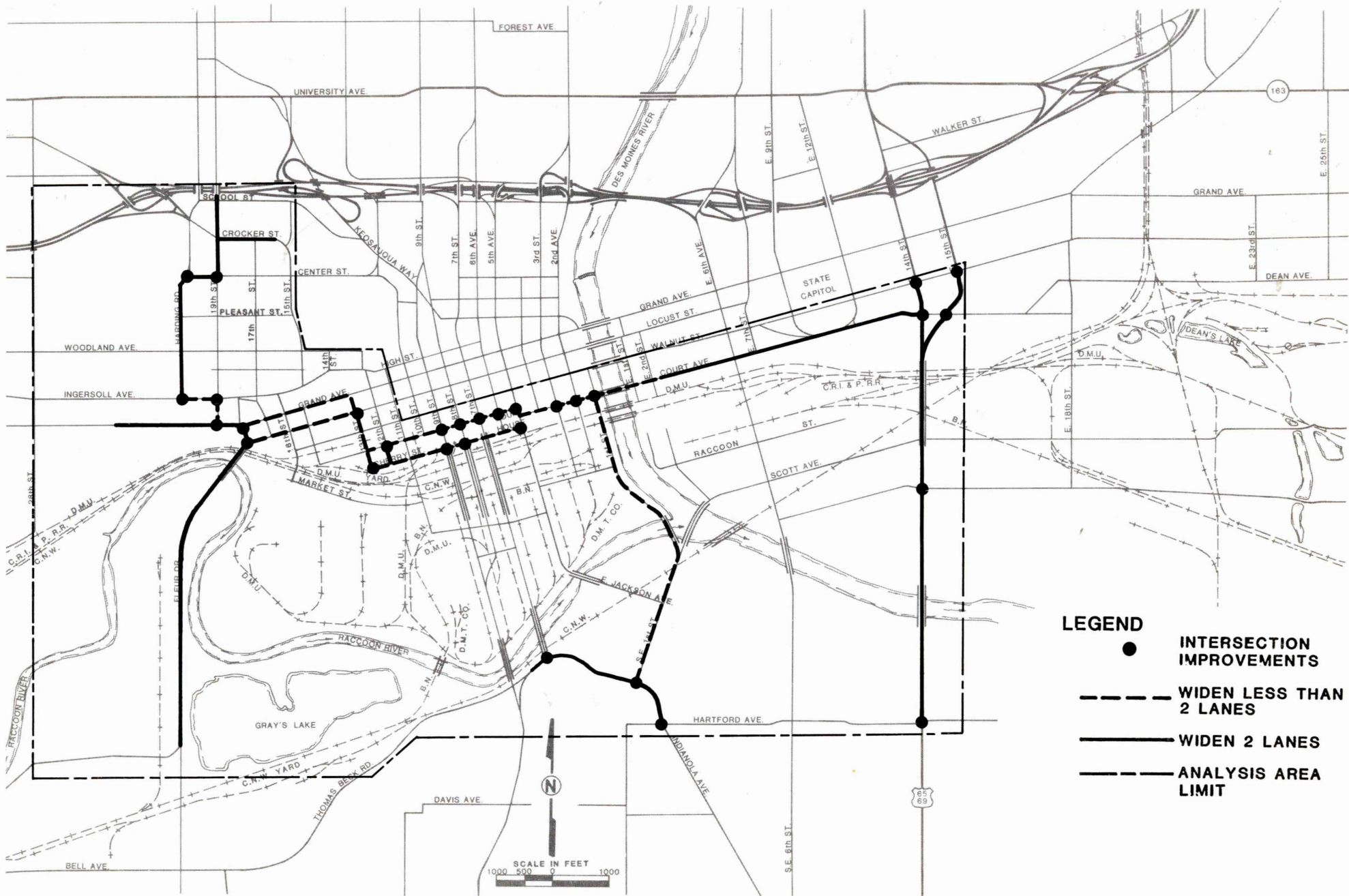


FIGURE 3.9 STREET WIDENING ALTERNATIVE SW-2



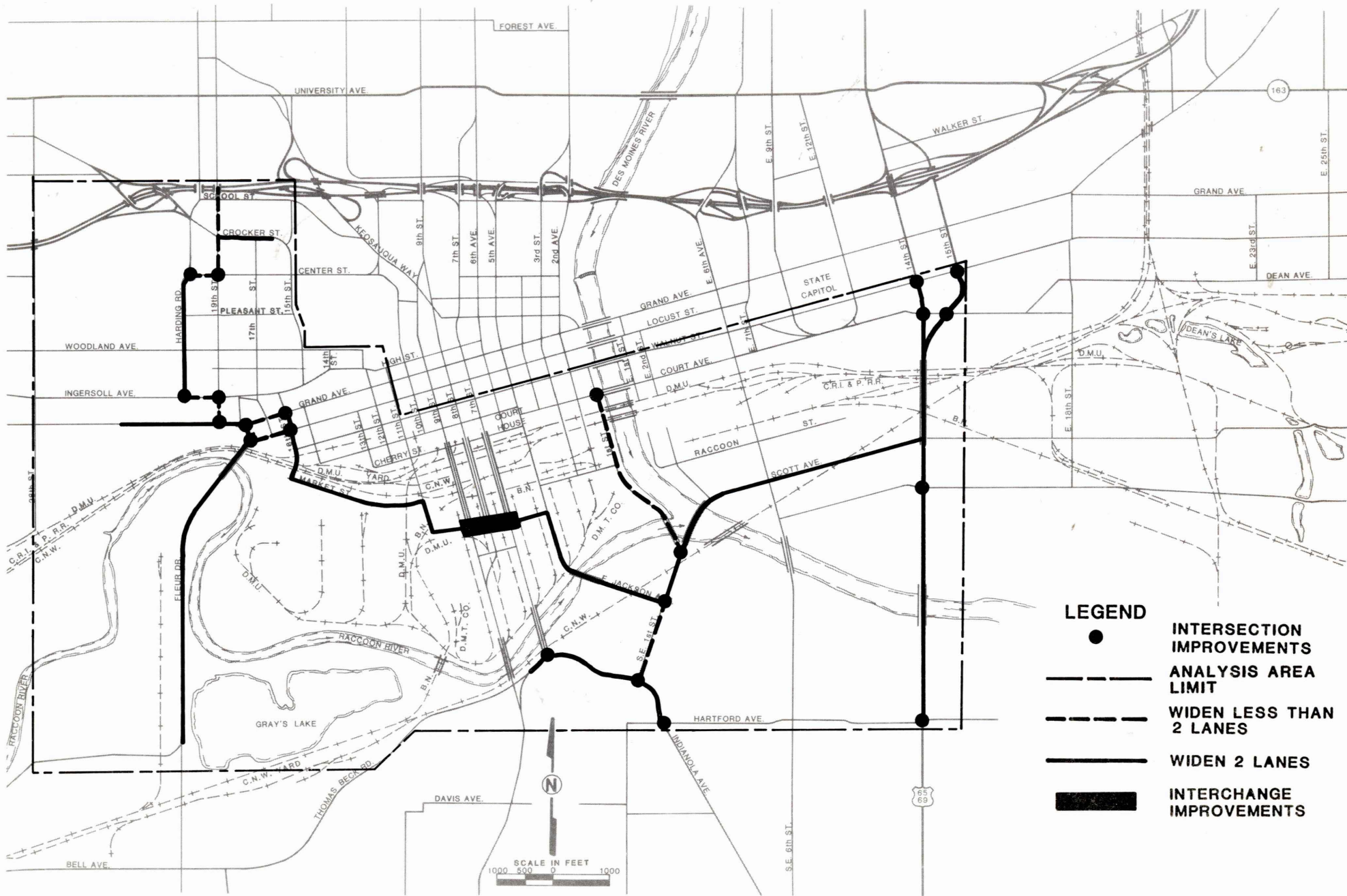


FIGURE 3.10 STREET WIDENING ALTERNATIVE SW-3

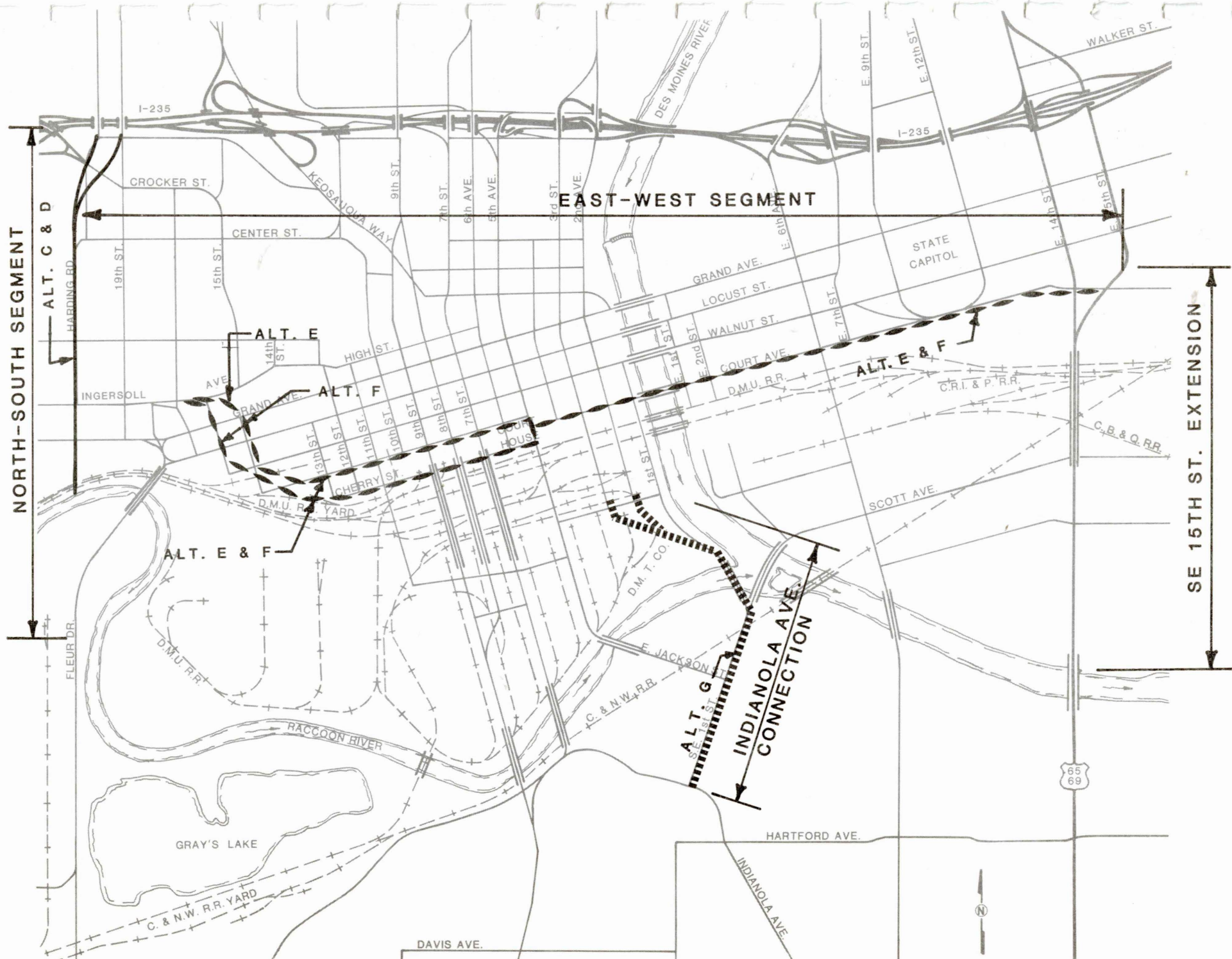
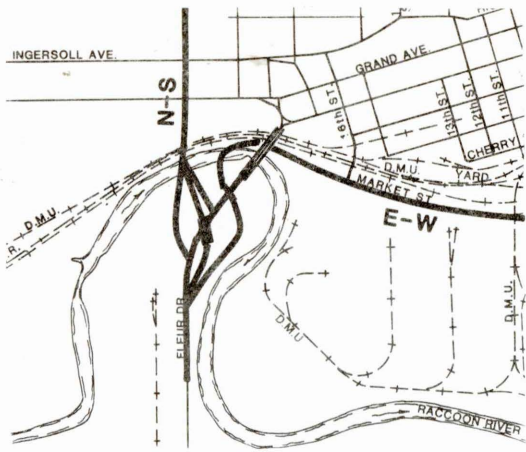


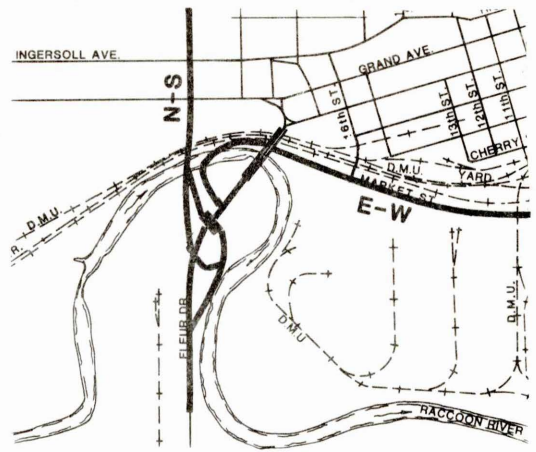
FIGURE 3.11 ALTERNATIVES CONSIDERED AFTER DRAFT EIS



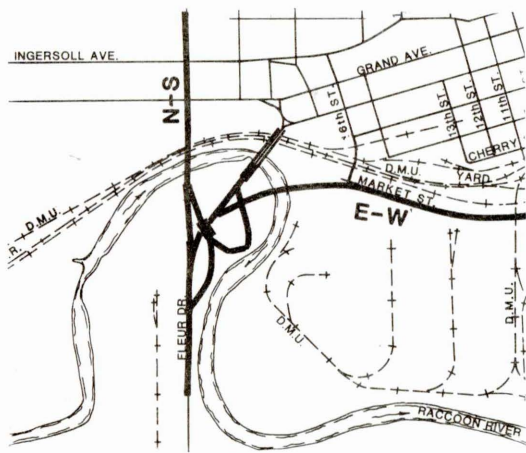
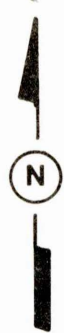




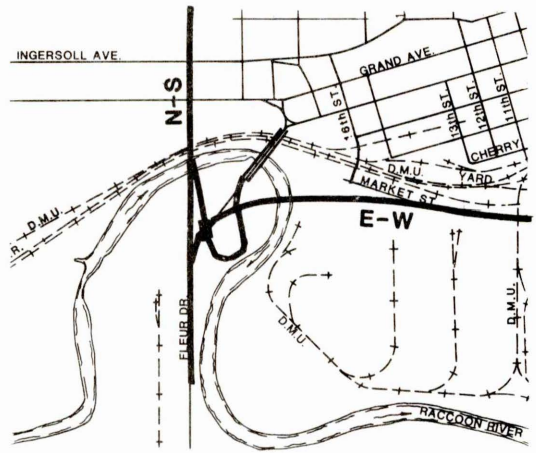
LAYOUT A



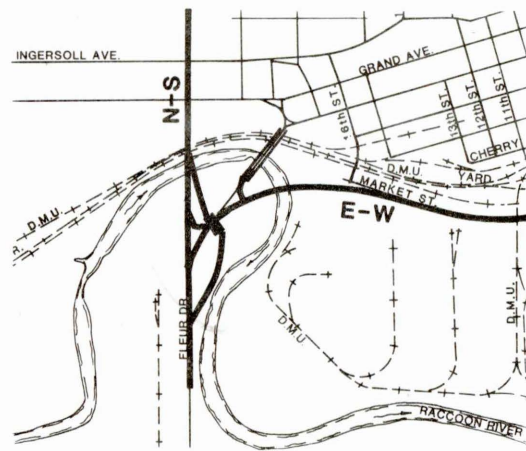
LAYOUT B



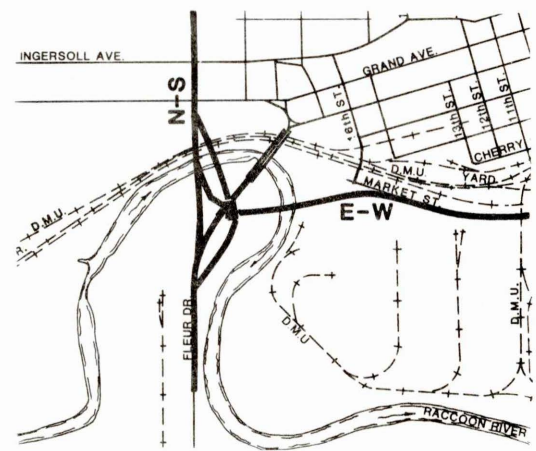
LAYOUT C



LAYOUT D



LAYOUT E



LAYOUT F

FIGURE 3.12 ALTERNATIVE LAYOUTS OF INTERCHANGE AT JUNCTION OF N-S AND E-W SEGMENTS

## SECTION 4

### AFFECTED ENVIRONMENT

#### NATURAL ENVIRONMENT

The study area is a three-mile long corridor located within the city limits of Des Moines, Iowa. It encompasses approximately 1,750 acres of land, most of which is highly urbanized.

The corridor is situated on the flood plains and terraces of the Des Moines River and Raccoon River, and the confluence of these two rivers occurs in the project area. Both of these river valleys are characterized by steeply sloping bluffs and a broken and dissected topography, especially near the bluff edges. Elevations in the project area range from approximately 790 feet (above sea level) in the flood plain areas to about 900 feet on the terraces (Figure 4.1).

The project area is immediately south of the terminus of the Des Moines Lobe, the last Wisconsin drift sheet to cover north-central Iowa. All of the county is underlain by bedrock belonging to the Des Moines Series of Pennsylvanian Age. These flat-lying strata consist of shale containing thin coal seams and interbedded sandstone and limestone. Most of this bedrock is buried under several feet of glacial till, loess and alluvium and has little effect on the surficial topography. Rather, glacial deposits and erosion are responsible for the majority of the landforms.

The Des Moines and Raccoon River flood plains are areas of recent alluvial deposits with numerous meander scars. During the melting of the Wisconsin glacier, outwash was carried from the glacier by the major channels in this area. More than 90 feet of glacial debris and alluvium now lie in the deep bedrock channel cut in shale beneath the Des Moines River.

A field study of the geomorphology of the project area was conducted as part of this EIS project in 1982 and 1985. Terrace sequences in the river valleys were identified, and sediments from these deposits were aged. The amount of surface disturbance of these deposits and the depth of buried deposits were evaluated. Soil profiles were developed for six sites within the project area. This information was utilized in assessing the potential for archaeological sites within the project corridor. This study is presented in its entirety in Chapter 3 of Appendix Volume II, "Cultural Resources of the CBD Loop Arterial Project Area, Phase I Investigations."



In the late 1800s and early 1900s there were many active coal mines throughout the city. Most of the productive coal seams were depleted, and the last mine closed around 1946. Recently, the collapse of portions of several of these mines have caused holes to open up in an area to the east of the State Capitol. The Iowa Geological Survey has conducted a recent survey of these coal mines.

Other mineral resources in Des Moines of economic importance include sand, gravel, clay and sandstone.

The Des Moines River passes through the city near the center of the project area, flowing in a southeasterly direction. Upstream from Des Moines it drains a large area in both south-central Minnesota and north-central Iowa (upper Des Moines sub-basin). Total drainage area of this subbasin just north of the mouth of the Raccoon River is 6,245 square miles. The Raccoon River subbasin drains a large area in northwest and west-central Iowa and has a drainage area of 3,441 square miles at a point just upstream from the project area. After leaving Des Moines, the river flows in a generally southeasterly direction for 535 miles and joins the Mississippi near Keokuk, Iowa. Its total drainage area is 14,540 square miles.

According to the Iowa Department of Natural Resources classification, the water quality of both the Des Moines and Raccoon Rivers in the project corridor falls in the Warm Water B category for Surface Water Classification. These waters are suitable for nonbody contact recreation such as boating or fishing. The Raccoon River is also classified as Warm Water C, which designates a potable water supply, in the vicinity of the Des Moines Water Works. This river is the major source of water for the city of Des Moines.

The most significant types of pollution in the Des Moines River are turbidity related to upstream soil erosion and bacteria related to municipal sewage outfalls. However, the recently constructed Saylorville Reservoir upstream from Des Moines has greatly reduced the silt loads in the reach of the river that passes through the city. Low dissolved oxygen levels are a problem in the Des Moines River during low flow conditions. Ammonia violations have occurred at times.

Low dissolved oxygen and high ammonia levels are also periodic problems in the Raccoon River. Water samples for pesticides and metals have been taken extensively at the water supply intake for the Des Moines Water Works directly upstream from the project corridor. These samples have shown that water levels of pesticides and metals have not been in excess of Iowa standards or National Academy of Science recommended maximum levels.

The Des Moines River is heavily used for recreation. Two major Corps of Engineers' flood control reservoirs have recently been constructed on the Des Moines River near Des Moines and are major recreation sites for the area. Saylorville Dam (5,500 acres) is located approximately 15 river miles upstream from the project site, and Red Rock Reservoir (5,400 acres) is downstream in an adjacent county.

Within the project area, these rivers have been highly modified by urban development. Flood control walls and earthen dikes have been installed in the flood plain and along the shores of both rivers (see Figure 5.8). The course of the Raccoon River at its mouth was modified in the early 1900s by the city of Des Moines. The old channel entered the Des Moines River approximately 700 feet to the northwest of the existing channel. The old channel was filled with debris and rubble and now underlies Riverside Park and Sec Taylor Stadium (refer to Figure 4.5 for locations of these facilities).

There are eight highway bridges and two railroad bridges crossing the Des Moines River and five highway bridges and one railroad bridge crossing the Raccoon River in the project area. Two low-water dams have been constructed on the Des Moines River in the project area (at Scott Street and Center Street) and one low-water dam occurs on the Raccoon River (east of the Fleur Drive bridge).

The City of Des Moines obtains its municipal water supply from a surface water intake on the Raccoon River, a surface water intake on the Des Moines River and groundwater from the alluvium of the Raccoon River Valley. Groundwater is collected through an extensive infiltration gallery system composed of a North Gallery and a South Gallery. The infiltration galleries and the Raccoon River intake are located in Water Works Park. The alluvial aquifer receives its recharge primarily from the river and local precipitation. However, the water quality is substantially different than that of the river which indicates partial recharge from other sources.

In 1986, the Des Moines Water Works discontinued using a part of their water source, the North Gallery, due to contamination of the groundwater. The U.S. EPA had conducted investigations in this area and identified the source, the Des Moines TCE site, which was placed on the EPA National Priorities list of uncontrolled hazardous waste sites in 1983. This site is a groundwater plume containing volatile organic compounds, particularly trichloroethylene (TCE). Remedial action is being undertaken in 1987. This site is located within the proposed CBD Loop project corridor along the Raccoon River to the west and southwest of the Fleur Drive bridge. The relationship of the project to this TCE site is discussed in Section 5 under "Water Quality."

Both of these rivers provide good habitat for fish and other aquatic life. According to the Iowa Department of Natural Resources, these rivers provide excellent fishing for channel catfish. White bass and carp are also abundant year-round. Seasonal fishing for walleye, crappie and white bass hybrids is also very good. Since the impoundment of Saylorville and Red Rock, there has been an increase in the diversity of fish species in this reach of the Des Moines River; and game fish, such as walleye and northern pike, have become more abundant (personal communication, Don Bonneau, Fisheries Biologist, IDNR, Des Moines). Fishing from the shore is common in the project corridor.

The only undeveloped areas are located in the southwest portion of the corridor adjacent to the Raccoon River and in the western edge of the corridor. These areas include stands of flood plain forest, wetlands and old fields. Plant species occurring here are typical of flood plains in Iowa. No threatened or endangered plant species are known to occur in the area. Much of this area is existing or proposed open space for the city of Des Moines.

These areas provide habitat for a wide variety of common wildlife species. Small mammals and birds are abundant in the more remote portions of the corridor. Deer, red fox and other wildlife are occasionally seen on the Water Works property (personal communication, Dean Johnson, Director, Des Moines Water Works). The Des Moines River valley is a major migratory pathway for birds, and the Des Moines Audubon Society lists 56 species as common or abundant migrants. No threatened or endangered animal species are known to occur in the corridor. However, the peregrine falcon (Falco peregrinus) and the bald eagle (Haliaeetus leucocephalus) have been seen in the vicinity of Des Moines.

There are many scenic viewpoints in the city, primarily associated with the river bluffs and river flood plain areas. From the high bluffs north of the Raccoon River, broad vistas of the river and greenbelt along the river are very scenic. The State Capitol and Terrace Hill (Governor's mansion) are situated on these river bluffs. From the flood plain areas in most of the project corridor, one has excellent views of these two structures.

The climate of the area exhibits a wide variation in both temperature and precipitation during the year. The average yearly temperature is 49.8 F. The highest average month is July with 75.5 F., and the lowest is January with 20.5 F. The annual rainfall averages 32 inches, and snowfall averages 32 inches. The prevailing wind direction is southwesterly.

Air pollutants are currently being measured at four locations in Des Moines for suspended particulates and three locations for carbon monoxide. Other monitoring sites have been discontinued. The primary and secondary TSP standards were exceeded three times and 14 times, respectively, at one location in 1986 near S.E. 18th Street and Scott Avenue. The carbon monoxide standard was not exceeded in 1985 at all three monitoring locations. One discontinued site is still expected to have carbon monoxide levels above the eight-hour standard. The CBD Loop project corridor is within the areas designated as secondary nonattainment areas for suspended particulates and primary nonattainment for carbon monoxide.

#### SOCIAL ENVIRONMENT

Des Moines is the Capitol and largest city within the state of Iowa. Table 4.1 provides population and housing trends for the city of Des Moines, Polk County and the state of Iowa. As these data indicate, there has been a gradual decrease in total population for the city of Des Moines since 1960. The corporate limits of Des Moines include about 65 square miles, while the Des Moines SMSA encompasses 1,136 square miles.

In 1980, 90.5 percent of the total Des Moines population was white, 6.8 percent was black, while 2.7 percent were other racial groups (primarily Spanish and Asian). In terms of age, 25.8 percent of the population was under 18, while 12.5 percent was 65 or older.

Within the Des Moines SMSA, the 1980 population was 338,048, 94 percent of which was white, 4 percent was black and 2 percent was other races. In terms of age, 28 percent were under 18, and 10.3 percent were over 65. Population characteristics for specific census tracts affected by the project are discussed in the next section of this report.

Des Moines population originally developed as a low density, primarily single-family one with development spread over a considerable area. In comparison with other U.S. cities of similar size, Des Moines was found to have more land per capita and lower residential densities than most of the other 10 cities surveyed (Des Moines Plan and Zoning Commission, 1978, Proposed 1990/2000 Land Use Plan).

Prior to 1960, most of the low density residential development was in the outlying areas, and the high density residential development was restricted to the central areas. However, since that time, there has been a dramatic shift from single-family homes to multi-family dwellings. Most of the apartment construction has occurred in the outlying areas, primarily along major roadways.



The majority of subdivision activity has been in the southern areas of the city. The northwest and northeast corners of the city have also experienced considerable development.

At the same time, there has been little new development in the central city, but rather considerable demolition resulting in a number of vacant lots.

There are 12 neighborhoods in Des Moines (Figure 4.3). These neighborhoods are the units used by the city for planning purposes. The project corridor includes portions of six of these neighborhoods: Willard, Hiatt, Downtown, Callanan, Brody and Weeks (Figure 4.3). Besides residential areas in these neighborhoods, the corridor also includes part of the Des Moines Central Business District, industrial areas and commercial areas.

The residential areas in the affected neighborhoods are all old, and most of the homes were constructed in the late 1800s and early 1900s. In the Callanan neighborhood, many of the homes predate the 1900s, and two areas have been declared as National Register Historic Districts (Sherman Hill Historic District and Owl's Head Historic District).

Many of these older, centrally located neighborhoods house a more transient population than do the outlying areas. Many of the dwellings that were originally single-family, owner-occupied have been converted to multiple-family dwellings that are renter-occupied.

Many of the residential areas in the central city area have been identified as areas with considerable economic, physical and social problems which make them eligible for Community Development Block Grant programs and other forms of federal assistance. A reevaluation of these areas was conducted by the City Plan and Zoning Department in 1982 using low-income and housing deficiencies as criteria for identifying target areas for these programs. The income criterion for inclusion was that over one-half of the families had an estimated household income at or lower than 80 percent of the city-wide median income. The condition of the residential structures was also a consideration (Des Moines Plan and Zoning Department, 1982, "Recommended Changes to Prime Service Area Boundaries").

All of the residential areas that would be directly affected by the project were included in these proposed target areas. Programs that are recommended for these target areas include rehabilitation, redevelopment, home improvement loans, limited relocation and demolition. Target areas within the project corridor appear in Figure 4.3.

Further descriptions of the six affected neighborhoods, including census statistics for the census tracts and blocks affected by the project, appear in Section 5.

Des Moines has a large amount of land devoted to parks and open spaces (about 3,000 acres). Much of this is located adjacent to the Des Moines and Raccoon Rivers and provides long continuous stretches of open space along these rivers (Figures 4.4 and 4.5). The city has recently acquired some of this land as part of an overall Riverfront Development project for recreation and open spaces.

One aspect of this River Front Development project is the construction of about 22 miles of riverfront bike trails. To date, almost 10 miles of the system has been completed (Figure 4.5). This includes a 4.3-mile segment between Ashworth Park and Gray's Lake and a 5.5-mile segment between McHenry Park and Hawthorn Park. Future plans include the construction of several rest stops and information centers and a bike bridge over the Raccoon River near Gray's Lake.

There are many schools and churches in the Des Moines SMSA. Those that are in or near the project corridor are shown in Figure 4.2.

Many of the city's cultural and recreational attractions are located in or adjacent to the project area. These include the State Capitol, Terrace Hill (Governor's mansion), the Civic Center Theater, Botanical Center, Sec Taylor Stadium, the Iowa Historical Museum, the Des Moines Public Library and the Veterans Memorial Auditorium (Figure 4.5).

The project area also includes the site of the founding of the original fort in 1843 and the area that was the site of early settlement of the city of Des Moines (Figure 4.5).

Future city plans for the area within the CBD Loop Corridor include: the expansion and remodeling of Sec Taylor Stadium to include various athletic facilities; redevelopment of the existing residential area south of the Raccoon and Des Moines Rivers near downtown (Weeks Neighborhood) to take advantage of the riverfront open space areas; and expansion of the public and semi-public uses along the river in the downtown area.

#### ECONOMIC SETTING

The Des Moines economy has historically been based on insurance, publishing and wholesaling. These continue to be the leading employers today, along with government and manufacturing.

The average unemployment rate (CPS rate) for 1986 was 6.7 percent for the city of Des Moines. The unemployment rate for the city of Des Moines for January, 1987, was 6.1 percent and 5.2 percent for the SMSA. The average family income for Des Moines was \$20,755.00, and the average household income was \$16,793.00 (1980 Census).

Major industries in Des Moines include finance and insurance, government, financial services, manufacturing, trade and service. Major firms include the Principal Financial Group (insurance), Firestone Tire & Rubber Co., John Deere (farm machinery), the Meredith Corporation (diversified media) and Younkers (department stores). There are 58 home offices of insurance companies located here.

Many of the major employers are located in or adjacent to the Des Moines CBD and within the project corridor for the CBD Loop Arterial project. The proposed alignment for all "build" alternatives under consideration will pass through some commercial and industrial land.

The downtown area has traditionally been the center of commercial activity in Des Moines. However, since the 1950s large, outlying shopping centers and strip commercial developments along major streets have considerably diminished the amount of commercial activity in the downtown area. Similarly, there has been a trend for industrial development to shift to the fringe areas of the city. There has also been a recent decline in the amount of industrial employment.

## LAND USE TRENDS

### Existing Land Use

Existing land usage and recent changes in land usage for the city are presented in Table 4.2. The increases in developed land shown in this table have occurred over a period of population loss for the city (from 208,982 in 1960 to 201,404 in 1970 to 191,003 in 1980). This reflects an increasing per capita need for all types of urban land. It also reflects an under-utilization of previously developed land, particularly in the central city area. Like many other U.S. cities, there has been a movement of residential, commercial and industrial areas to outlying areas along with the abandonment and demolition of structures in the central city. Many of the current land-use policies for the city are aimed at reviving the central city area. These will be discussed later in this section.

In comparison with ten other cities of similar size, Des Moines was found to have slightly more land per capita than most of the other cities, rather low residential densities, and the

largest amount of land devoted to parks, open spaces, and public and semi-public uses (1978 survey by Des Moines Plan and Zoning Commission). Figure 4.6 presents the current land-use map for the city. This map was prepared in 1978 by the City Plan and Zoning Commission. Some changes in the amount of land in the various land-use categories have occurred since then, but this figure still represents the basic areas of land use in Des Moines. Figure 4.7 presents a more detailed mapping of land uses in the project corridor and was based on 1981 data.

The study area includes a wide range of land uses, from single-family residential to light manufacturing and industrial. It also includes a considerable amount of vacant land.

The residential areas are located at the eastern, north-western and south-central edges of the corridor. The eastern and south-central residential areas are almost entirely single-family, while the northern area is primarily multi-family. Also, there is considerable residential usage in the commercial areas, where it is fairly common to find residential uses on the upper floors of many commercial buildings. All of these residential areas are older, central city areas that have undergone deterioration and abandonment to some degree and are targets for revitalization. Features of these residential areas are discussed in this section under "Social Environment" and in Section 5 under "Social Impacts."

The commercial areas in the corridor include the large office and retail concentration in the CBD as well as scattered neighborhood nodes and strip developments along major thoroughfares. Commercial uses vary from large office building and department stores to small neighborhood grocery stores and restaurants. Some of the largest commercial employers in the city occur in the corridor.

The industrial land usage in the corridor is primarily concentrated in an area south of downtown. This is the oldest industrial area in the city and developed here because of access to rail lines. Wholesalers, construction companies and various manufacturing concerns have been located here over the years. It was the major center for wholesaling in the state for a number of years. Currently, the area contains warehouses, wholesale suppliers, a steel plant, several small manufacturing concerns, trucking firms, and some vacant buildings.

The project corridor abuts upon another old industrial area that would be affected by the project. This area is located along the eastern border of the corridor (east of S.E. 14th Street) and includes several major manufacturing concerns.



Currently, most of the major industrial activity is located in the fringe areas of the city in well-planned industrial parks, primarily in the northern and western areas of the city. The facilities and layout of the older, central city industrial areas need upgrading, particularly streets, utilities and accessibility.

A number of parks and open space areas occur in the corridor. Most of the recent open space acquisition by the city has taken place in this area, especially along the riverfronts. There is also a considerable amount of public and semi-public usage, primarily associated with the State Capitol Complex and other government buildings in the CBD.

#### Future Land Use

The 2000 Land Use Plan for the City of Des Moines has been developed by the City Plan and Zoning Commission as part of the city's 2000 Comprehensive Plan. The Land Use Plan consists of two elements: a series of land-use goals and objectives and a land-use concept that graphically depicts the recommended development patterns for the various land within the city. The proposed land usage for the area in and adjacent to the CBD Loop Arterial project is presented in Figure 4.8.

Past land-use trends have been described under "Social Environment," "Economic Setting," and "Existing Land Use" in this section. Major trends have included:

Low-density development in general with a recent trend toward higher density development in the fringes and along major thoroughfares.

Some abandonment of the residential, commercial and industrial areas of the central city.

Greatest amount of subdivision activity occurring on the south side.

Increases in office space both in the downtown area and in outlying areas.

Slight decline in industrial activity.

Movement of many industries to industrial parks on the fringe areas of the city.

Future trends and needs that have been identified include:

Continued major residential and commercial growth in the south side; modest growth in the northeast and northwest.

Need for development of more industrial, residential and commercial land, some of the need to be met through redevelopment.

Increase in commercial competitiveness of the downtown area because of the recently constructed skywalk system and other downtown improvements.

Increase in commercial space, particularly office space in the downtown area.

Need to improve streets, utilities and layouts of existing central city industrial areas to be competitive with suburban areas.

Continued expansion of governmental offices around the State Capitol Complex.

Increased usage of the Des Moines Municipal Airport.

Street improvements for many of Des Moines thoroughfares.

Consolidation and abandonment of some existing rail lines, especially in the downtown area.

The future residential trends that are pertinent to the CBD Loop project are described in more detail in the following paragraphs.

Residential demolitions are expected to continue at a high rate, and two-thirds of these are expected to occur in the older, centrally located neighborhoods (Hiatt, Callanan, Willard, Downtown, Irving). Significant amounts of rebuilding are projected for the four central city neighborhoods (Irving, Hiatt, Callanan and Downtown) if current public and private redevelopment efforts are successful. A considerable amount of restoration of homes has already taken place in the Sherman Hill area (Callanan Neighborhood). Also, several new multi-family residential complexes have recently been completed in or near the CBD.

At least one-half of the new residential growth is projected to occur in the southern limits of the city, especially in the area east of E. 14th Street and south of the Des Moines River.

The land-use goals that are a part of the 2000 Land Use Plan are presented in Appendix B.1.

Major proposed land uses for the corridor are industrial, commercial, recreation/open spaces, public/semi-public, office-retail and residential (primarily high-density residential and

some medium-density residential). Existing and future land uses are further described for each neighborhood in Section 5, "Environmental Consequences."

Rep/Dm2/ACO

TABLE 4.1  
POPULATION AND HOUSING DATA

Year	Des Moines		Polk County		Iowa	
	Population	Year-Round Housing Units	Population	Year-Round Housing Units	Population	Year-Round Housing Units
1960	208,982	71,758*	266,315	89,084*	2,757,537	905,295*
1970	200,587	72,337	286,101	98,268	2,824,376	954,801
1980	191,003	79,891	303,170	122,075	2,913,808	1,121,199

\*All housing units.

Sources: Population Abstract of the United States, Andriot Associates; Census of Housing, 1960, Vol. 1, States and Small Areas; 1970 Census of Housing, Vol. 1, Housing Characteristics for States, Cities and Counties; Census Summary Tape File 1, Iowa, 1980.

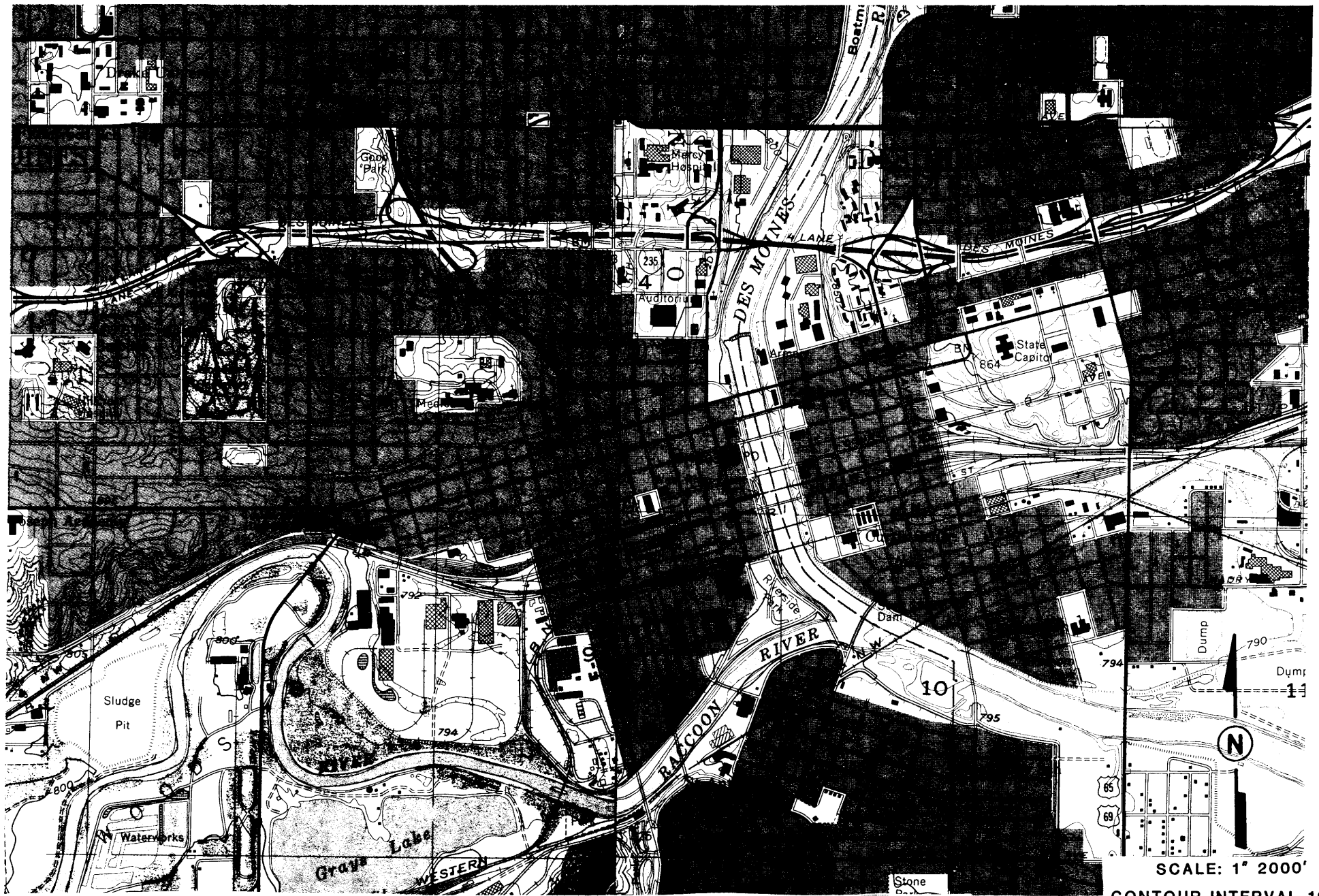
TABLE 4.2  
LAND USE IN DES MOINES IN 1962, 1973 AND 1981

Land-Use Category	1962	1973	1981 Estimates	% Change 1962-1973	% Change 1973-1981
Commercial	1,060	1,800	2,000	+70%	+11%
Residential	13,980	14,500	15,200	+4%	+5%
Industrial	1,530	2,050	2,700	+34%	+32%
Public/Semi-Public	3,140	3,390	3,500	+8%	+3%
Parks & Open Space	2,360	2,910	3,860	+23%	+33%
Transportation	<u>6,270</u>	<u>7,650</u>	<u>7,800</u>	<u>+22%</u>	<u>+2%</u>
TOTAL DEVELOPED	28,250	32,300	35,060	+14%	+9%
Vacant Land & Rivers	<u>12,470</u>	<u>9,800</u>	<u>7,230</u>	<u>-21%</u>	<u>-26%</u>
TOTAL ACRES	40,720	42,100	42,290	+3%	+5%

Source: Des Moines Plan and Zoning Commission.

Rep/Dm2/AD5





**FIGURE 4.1 TOPOGRAPHIC MAP OF THE PROJECT AREA**  
 ( FROM U.S.G.S. DES MOINES SE. QUADRANGLE, S.W. QUADRANGLE 7.5 MINUTE SERIES )

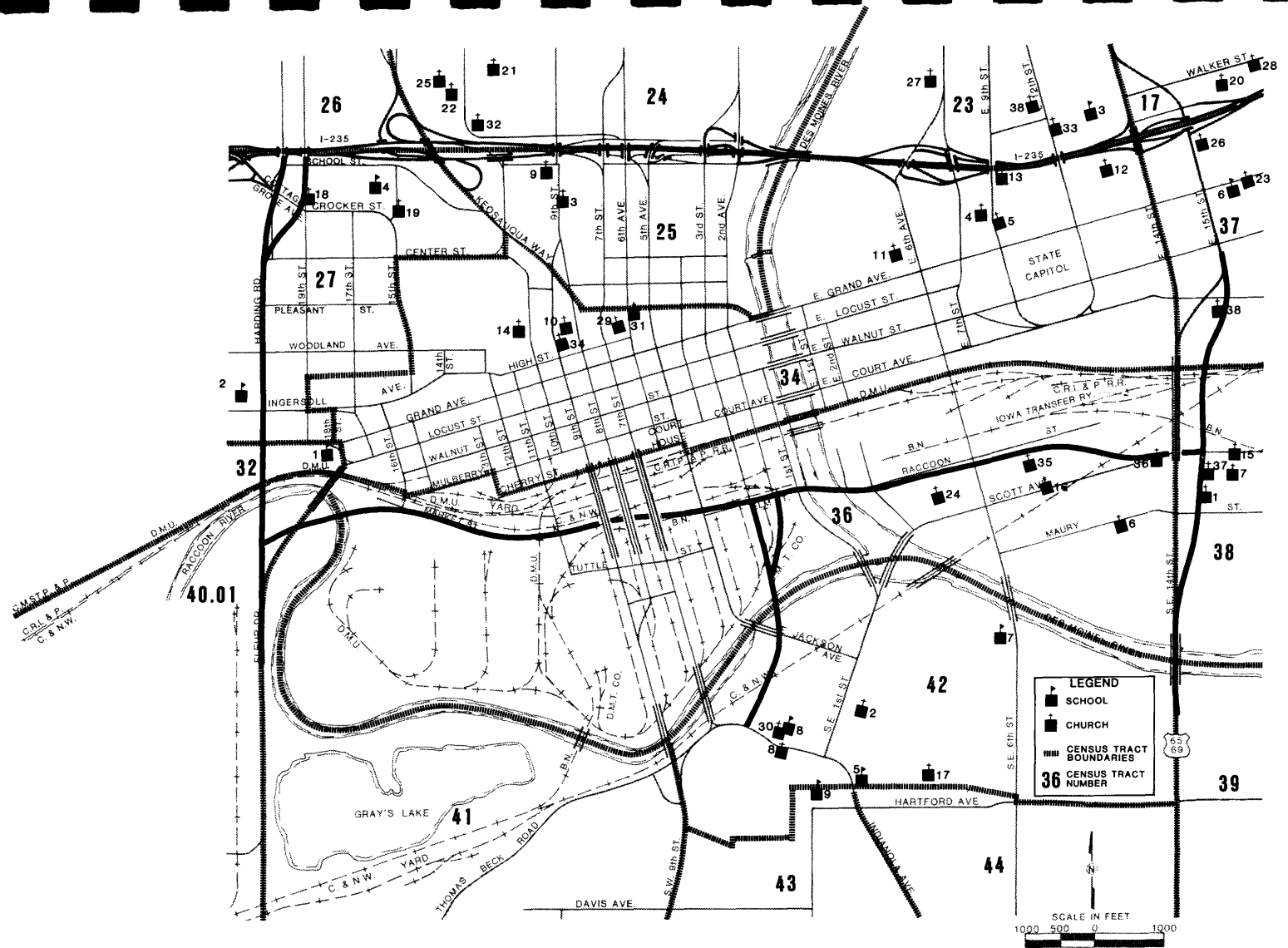
SCALE: 1" 2000'  
 CONTOUR INTERVAL 10ft.

**CHURCHES**

1. ALL NATIONS CHURCH OF GOD IN CHRIST  
711 S.E. 14TH COURT
2. BETHANY OPEN BIBLE CHURCH  
128 DUNHAM AVENUE
3. BURNS UNITED METHODIST CHURCH  
811 CROCKER STREET
4. CALVARY BAPTIST CHURCH ABCUSA  
606 EAST 9TH STREET
5. CENTRAL LUTHERAN CHURCH  
EAST 9TH & DES MOINES STREETS
6. CHURCH OF COMPASSION  
1000 S.E. 11TH STREET
7. CHURCH OF THE FIRST BORN  
619 S.E. 15TH STREET
8. CLIFTON HEIGHTS UNITED PRESBYTERIAN CHURCH  
1938 S.W. 1ST STREET
9. CORINTHIAN BAPTIST CHURCH  
814 SCHOOL STREET
10. FIRST BAPTIST CHURCH  
620 - 8TH STREET
11. FIRST EVANGELICAL LUTHERAN CHURCH  
EAST 5TH & DES MOINES STREETS
12. FIRST FRIENDS CHURCH  
615 EAST 13TH STREET
13. FIRST GRACE BRETHREN CHURCH  
EAST 10TH & LYON STREETS
14. FIRST UNITED METHODIST CHURCH  
10TH & PLEASANT STREETS
15. GRACE APOSTOLIC TEMPLE  
615 S.E. 15TH STREET
16. GUADALUPE ROMAN CATHOLIC CHURCH  
601 S.E. 8TH STREET
17. JORDAN UNITED METHODIST CHURCH  
1950 S.E. 4TH STREET
18. KINGSWAY CATHEDRAL  
901 - 19TH STREET
19. KYLES AME ZION CHURCH  
907 - 15TH STREET
20. MAPLE STREET BAPTIST CHURCH  
1552 MAPLE STREET
21. MISSION TEMPLE  
1161 ENOS AVENUE
22. MORNING STAR BAPTIST CHURCH  
1150 - 13TH STREET
23. MT. HEBRON BAPTIST CHURCH  
1600 EAST CAPITOL AVENUE
24. MOUNT OLIVE BAPTIST CHURCH  
501 S.E. 4TH STREET
25. NEW JERUSALEM CHURCH OF GOD IN CHRIST  
1198 - 14TH STREET
26. OUR SAVIOURS BAPTIST CHURCH  
1555 DES MOINES STREET
27. PENN AVENUE CHURCH OF GOD  
1000 PENNSYLVANIA AVENUE
28. PILGRIM BAPTIST CHURCH  
1732 WALKER STREET
29. ST. AMBROSE CATHEDRAL  
607 HIGH STREET
30. ST. ANTHONY'S CATHOLIC CHURCH  
INDIANOLA AVENUE & S.W. 1ST ST.
31. ST. JOHN'S LUTHERAN CHURCH  
6TH STREET & KEO WAY
32. ST. PAUL AME CHURCH  
1201 DAY STREET
33. ST. PAUL LUTHERAN CHURCH  
EAST 12TH & WALKER STREETS
34. ST. PAUL'S EPISCOPAL CHURCH  
815 HIGH STREET
35. SHELTERING ROCK CHURCH  
718 S.E. ALLEN STREET
36. SHILOH BAPTIST CHURCH  
1213 SCOTT AVENUE
37. SOUTHEAST ASSEMBLY OF GOD CHURCH  
715 S.E. 14TH COURT
38. VINE STREET GOSPEL CHAPEL  
1441 EAST VINE STREET
39. WESLEY UNITED METHODIST CHURCH  
800 EAST 12TH STREET

**SCHOOLS**

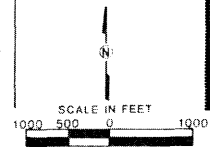
1. DES MOINES TECHNICAL HIGH SCHOOL  
1800 GRAND AVENUE
2. DES MOINES TECHNICAL HIGH SCHOOL  
ATHLETIC FIELD  
HARDING ROAD BETWEEN HIGH STREET & INGERSOLL
3. EAST HIGH SCHOOL  
EAST 13TH & WALKER STREETS
4. EDMUNDS SCHOOL  
1601 CROCKER STREET
5. GREATER DES MOINES EDUCATION CENTER  
1961 INDIANOLA AVENUE
6. LUCAS SCHOOL  
1535 CAPITOL AVENUE
7. MCKINLEY SCHOOL  
1610 S.E. 6TH STREET
8. ST. ANTHONY'S SCHOOL  
16 COLUMBUS AVENUE
9. WASHINGTON SCHOOL  
HARTFORD AVENUE & SOUTH UNION STREET



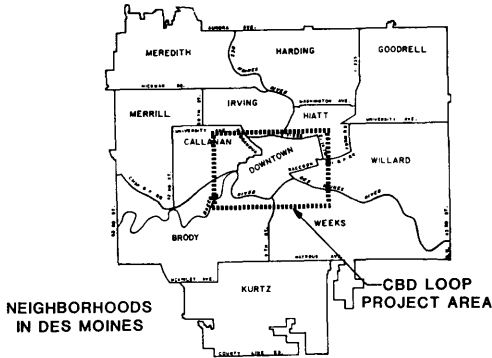
**LEGEND**

- SCHOOL
- CHURCH
- CENSUS TRACT BOUNDARIES
- CENSUS TRACT NUMBER

36 CENSUS TRACT NUMBER



**LEGEND**  
**CBD LOOP ARTERIAL**





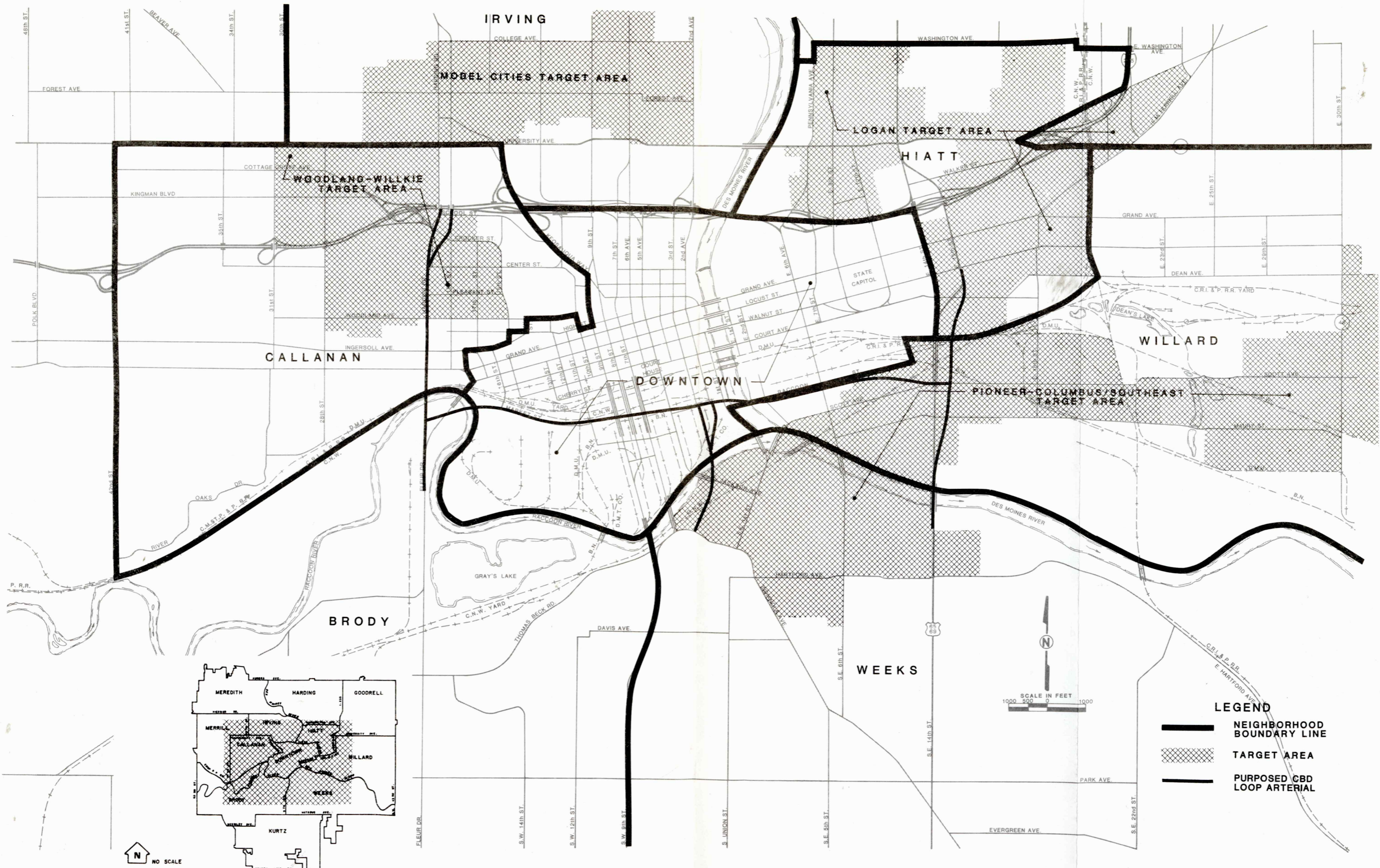
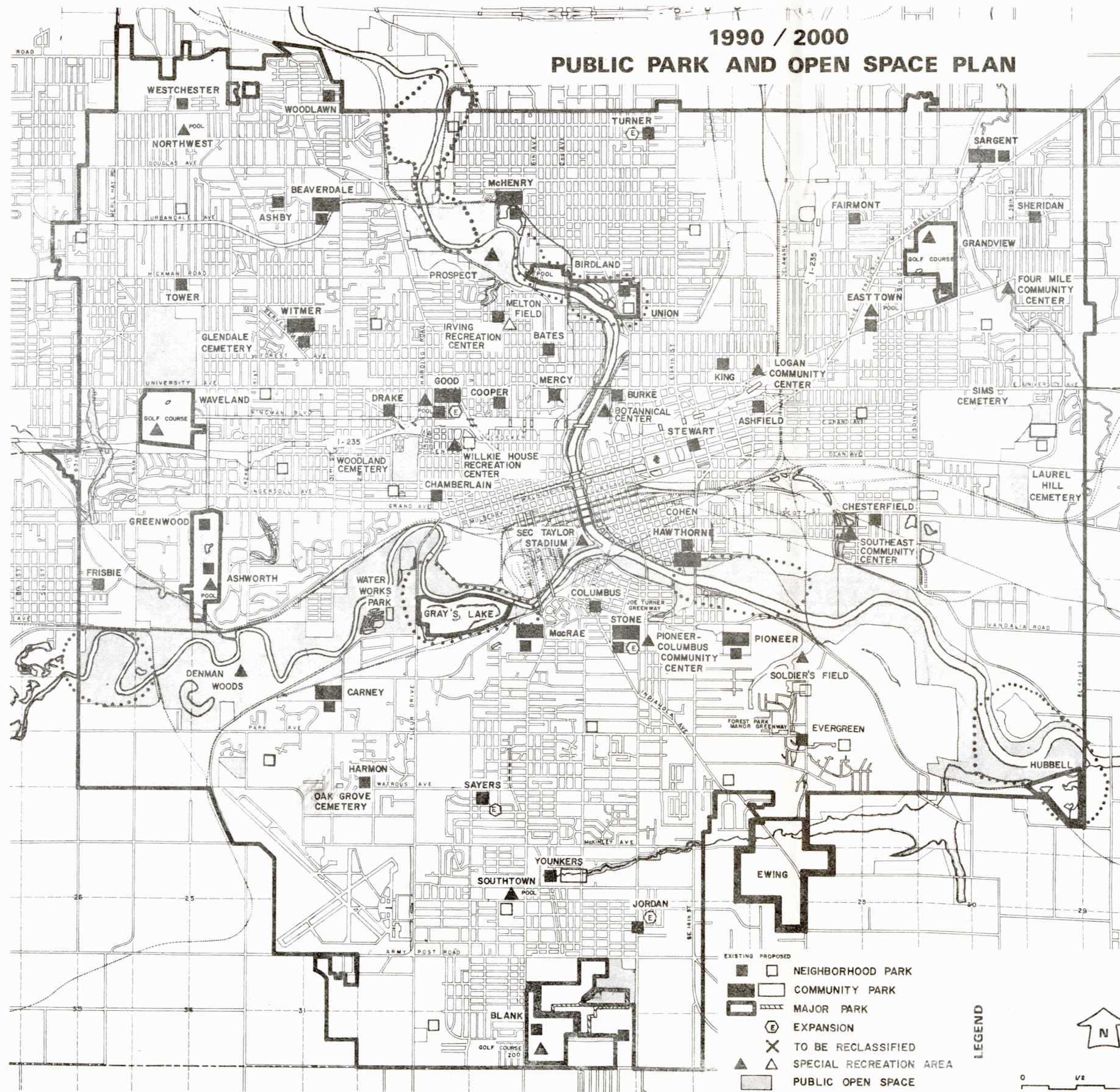


FIGURE 4.3 NEIGHBORHOODS AND TARGET AREAS IN THE PROJECT AREA  
 ( TARGET AREAS ARE FOR URBAN RENEWAL PROGRAMS )



**INVENTORY OF EXISTING PARKS**



**NEIGHBORHOOD**

Name	Location	Acres
Ashby	38th & Davison	10.5
Ashfield	E. 18th & Lyon	7.0
Bates	3rd & Clark	3.0
Burke	E. 7th & University	5.0
Chamberlain	19th & Ingersoll	2.0
Chesterfield	E. 27th & Scott	5.0
Columbus	S. E. 2nd & Indianola	5.0
Cooper	11th & Day	3.0
Drake	24th & Cottage Grove	5.0
Easttown	E. 26th & Easton	14.0
Evergreen	S. E. 22nd & Evergreen	7.0
Fairmont	Hull Avenue & E. 26th St.	6.0
Frisbie	61st & Muskogee	4.0
Harmon	S. W. 26th & Watrous	4.5
Jordan	Wall Street - Jordan Drive @ S. E. 7th Court	1.5
Melton Field	11th & Jefferson	3.0
Mercy	3rd & Laurel	1.0
King	1310 E. 17th	6.0
Sayers	S. W. 13th & Watrous	4.0
Sheridan	Hull & E. 39th Court	3.5
Stewart	E. 14th & Grand	2.0
Southtown	S. W. 11th & Porter	9.0
Tower	50th & Hickman	8.0
Turner	E. 8th & Madison	2.5
Westchester	49th & Valdez	6.0
Woodlawn	South of Twiss & Lawwood	6.0

**COMMUNITY**

Name	Location	Acres
Beaverdale	34th & Adams	20
Carney	S. W. 30th & Bell	4.5
Good	17th & University	12
Hawthorn	S. E. 14th & Railroad	15
MacRae	S. W. 9th & Davis	63
McHenry	Oak Park - 8th to 11th	17
Pioneer	S. E. 16th & Pioneer Rd.	46
Sargent	Colfax & Douglas	27
Stone	S. E. Fulton - 3rd to 4th Street	9
Witmer	34th & Washington	22

**MAJOR**

Name	Location	Acres
Ashworth	South of Greenwood, 45th to 49th	65
Birdland	Saylor Road & 6th Avenue	70
A. H. Blank	S. W. 9th & County Line Rd.	190
Ewing	Indianola Rd & City Limits	357
Grandview	E. 32nd & Easton	176
Grays Lake	900 Fleur Drive	165
Greenwood	Grand Avenue - 45th to 49th	81
Hubbell	Brooks Drive & S. E. 42nd	82
Union	E. 9th & Saylor Road	54
Waveland	University - 49th to 56th	195

**SPECIAL PARK LANDS & RECREATION FACILITIES**

Name	Location	Acres
Four Mile Community Center	3711 Easton Boulevard	14
Southeast Community Center	S. E. 25th & Maury	3
Logan Community Center	Garfield & E. 17th Court	9
Willkie House Recreation Center	17th & Crocker	1.0
Sec Taylor Stadium/Riverside Park	W. 1st & Elm	16
Botanical Center	909 E. River Drive	14
Prospect Park	Des Moines River, Hickman to 14th Street	77
Northwest Pool	50th & Madison	4
Soldier's Field	S. E. 22nd & Hartford	80
Cohen Historic Site	S. E. 10th & Scott	1.0
Forest Park Manor Greenway	S. E. 19th & Park vicinity	9.5
Joe B. Turner Greenway	S. E. 6th & Hartford	5.0
Pioneer-Columbus Community Center	2100 S. E. 5th	1.0

**PROPOSED PARK DEVELOPMENTS**

- FIRST PHASE PRIORITIES**
- Development of Riverfront lands
  - Yeader Creek Community Park
  - Northeast Riverfront Neighborhood Park
  - Expand Blank Golf Course

- SECOND PHASE PRIORITIES**
- Union & Park Avenue Site
  - 41st & Cottage Grove Site
  - East 27th & Walnut Site
  - Expand Southtown Park for Neighborhood Facility
  - Fairgrounds - Williams Street Site
  - Union Park - South Neighborhood Area Development
  - Freebeach Park

- THIRD PHASE PRIORITIES**
- 39th & Pleasant Site
  - 49th & Urbandale Site
  - Expand Good Park
  - 26th & College Site
  - Urbandale & 64th Street Site
  - Expansion of Sayers Park
  - Grandview College Site
  - Expand Turner Park
  - East 36th & Dubuque Site
  - 28th & Woodland Site
  - Expansion of Jordan Park
  - Watrous & Indianola Avenue Site
  - 17th & Center Site
  - East 26th & Evergreen Site
  - Soldiers' Field Neighborhood Facility

**FIGURE 4.4 PARKS AND OPEN SPACES IN THE DES MOINES AREA**







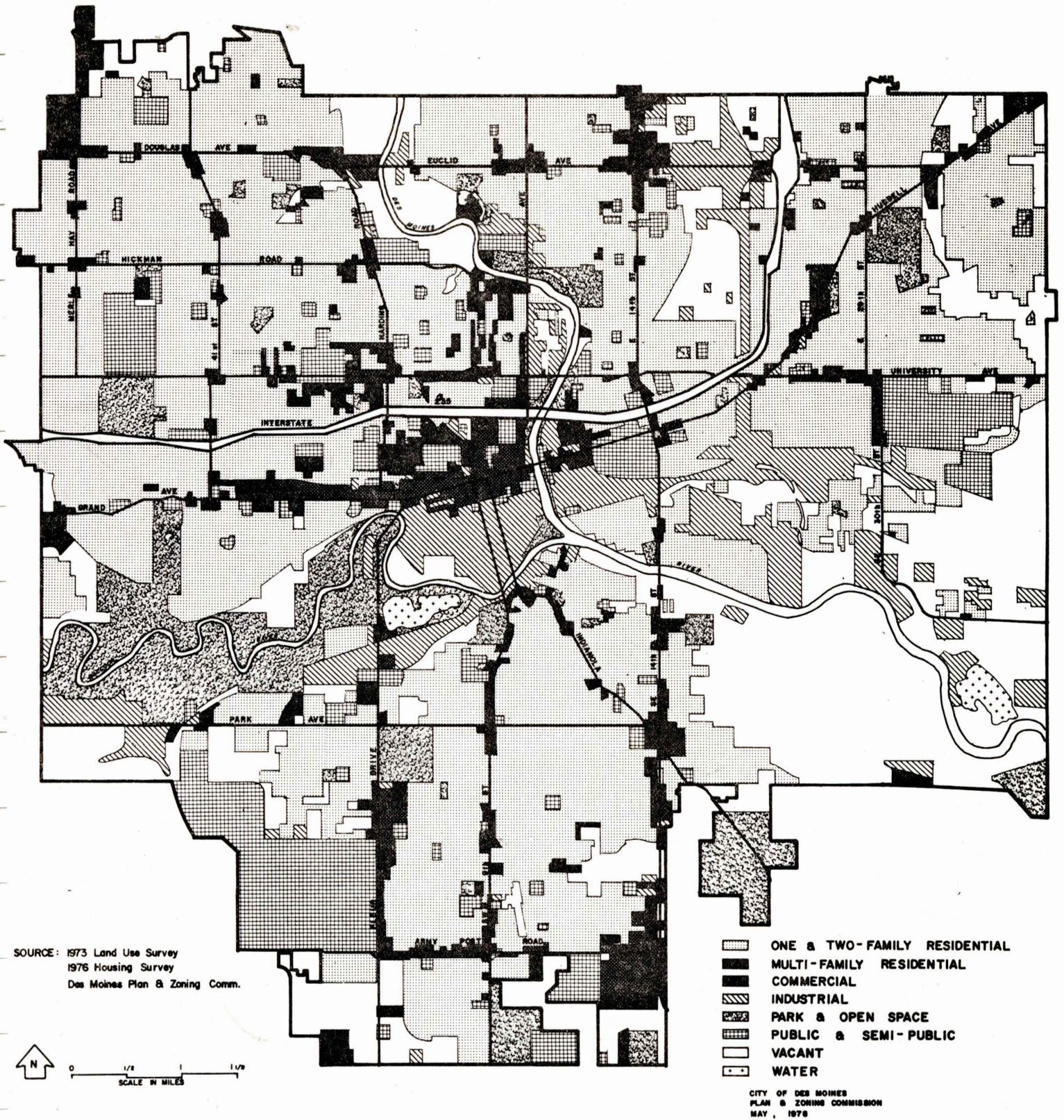


FIGURE 4.6 EXISTING LAND USE IN DES MOINES (1978)



- S** SINGLE FAMILY RESIDENTIAL
- M** MULTIPLE FAMILY AND TWO FAMILY RESIDENTIAL
- C** COMMERCIAL
- I** INDUSTRIAL
- P** PARKS AND OPEN SPACE
- PS** PUBLIC AND SEMI-PUBLIC
- U** UTILITIES
- V** VACANT

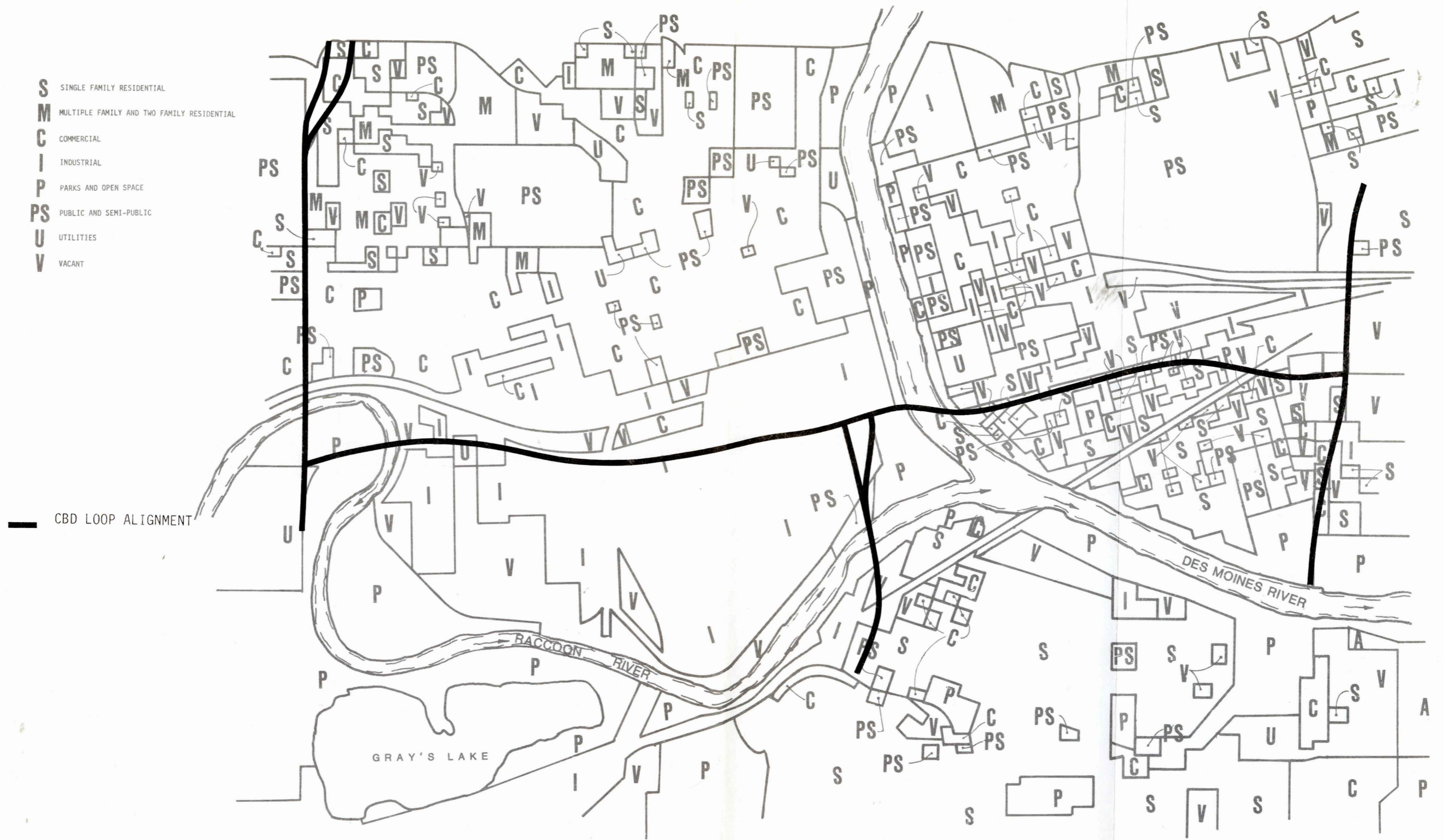


FIGURE 4.7 EXISTING LAND USE IN THE PROJECT AREA



- LDR LOW DENSITY RESIDENTIAL - UP TO 10 UNITS/ACRE.
- MDR MEDIUM DENSITY RESIDENTIAL - UP TO 15 UNITS/ACRE.
- HDR HIGH DENSITY RESIDENTIAL - UP TO 51 UNITS/ACRE.
- COM COMMERCIAL - CORRIDORS AND NODES OF GENERAL BUSINESS, RETAIL AND SERVICE ESTABLISHMENTS.
- IND INDUSTRIAL - MAJOR CONCENTRATION OF LIGHT AND HEAVY INDUSTRIES, WAREHOUSING AND RELATED USES.
- PSP PUBLIC/SEMI-PUBLIC - MAJOR PUBLIC AND SEMI-PUBLIC FACILITIES, SERVICES AND INSTITUTIONS.
- ROS RECREATION/OPEN SPACE - LARGE SCALE RECREATION ORIENTED ACTIVITIES, PRESERVATION AREAS, CEMETERIES, FLOOD PLAIN AREAS, GREENBELTS AND OTHER OPEN SPACES.
- CBD LOOP ALIGNMENT

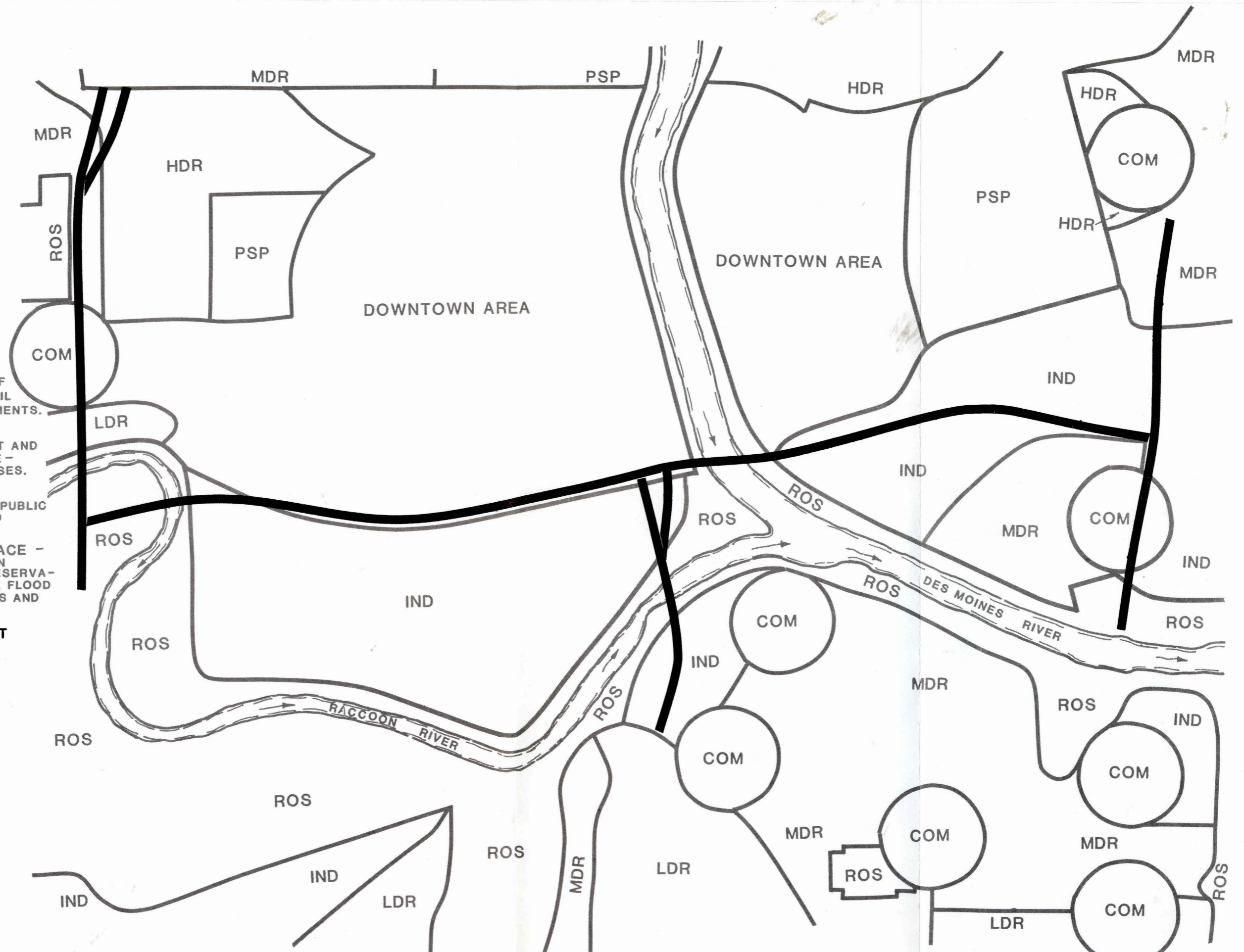


FIGURE 4.8 PROPOSED 2000 LAND USE PLAN FOR THE PROJECT AREA



## SECTION 5

### ENVIRONMENTAL CONSEQUENCES

A summary of the major environmental consequences described in this section appears at the end of this section.

#### RELOCATION IMPACTS

##### Residential Relocation Impacts

Displacement of residents from the established neighborhoods in the project corridor will be a major social impact of the project. The Preferred Alternative will displace an estimated 466 persons (Table 5.1). Subalternative 1A would displace the most residents (592). The Preferred Alternative will displace 84 residential buildings which house 181 housing units. These include 71 single-family dwellings and 110 apartment units. The other alternatives considered would have displaced from 196-244 housing units (Table 5.1).

Census data for the census blocks and tracts within which the project occurs and for the city as a whole appears in Tables 5.2 through 5.6. A comparison of characteristics of these subpopulations with those for the city of Des Moines appears in Table 5.7.

The neighborhood within which each census tract occurs in also indicated on these tables. In most cases, each census tract occurs within one neighborhood and is only one of several tracts within the neighborhood. However, census tracts 34 and 36 each overlap two neighborhoods, but the affected blocks within them belong to only one of the neighborhoods. Neighborhood boundaries are illustrated in Figures 4.3, 5.1 and 5.2. Census tract boundaries appear in Figure 4.2. A breakdown of the census block data and project displacement data for each neighborhood is presented in Table 5.8.

A comparison of the census tract data with that for all of Des Moines reveals that the population in the vicinity of the project contains higher percentages of non-whites than does the Des Moines population. There are lower percentages of owner-occupied housing units and single-family dwellings than for the city as a whole.

The block data shows these same trends with an even greater percentage of non-whites and renter-occupied housing units in the affected blocks than in the census tracts. The housing data for the affected properties is similar to that for the census blocks and tracts. Multi-family and renter-occupied housing units predominate. The population characteristics for the residents to be

displaced were not surveyed but were developed from the block data. Thus, they show the trends for higher percentages of non-whites and young people than is present in the city as a whole.

Acquisition payments would be made to each owner whose property is to be acquired. Such payments are based on fair market values and would be determined by appraisal of the properties at the time of acquisition. This appraised value would be in accordance with current real estate selling prices at the time of acquisition. In addition to acquisition payments, all eligible relocatees would receive relocation assistance in compliance with the Federal Uniform Relocation Assistance and Real Properties Acquisition Policies Act of 1970 (as amended in 1985) and Chapter 316, Code of Iowa, 1985.

The Relocation Assistance Program assists owners and tenants displaced by a highway project in finding decent, safe and sanitary housing. Both tenants and owners qualify for relocation assistance by meeting minimum residence requirements. All occupants will receive payments for moving expenses. In addition, any individual or family who has owned and occupied or rented a dwelling for at least 90 days before the start of negotiations is eligible to receive payments for closing costs incurred in purchasing another dwelling. Any individual or family that has owned and occupied their own home for at least 180 days before the start of negotiations is also eligible for a replacement housing payment to offset increased interest payments on a replacement dwelling. These supplemental payments to owners may not exceed \$15,000.00.

Renters are eligible for a rental replacement housing payment not to exceed \$4,000.00 if there is a difference between the amount necessary to rent a comparable dwelling and the amount of rent presently paid. It is based on a period of four years.

There is adequate replacement housing currently available in other areas in the city. In November, 1985, there were approximately 3,200 homes for sale in Des Moines with an average sale value for a two-bedroom home of \$43,053.00. In October, 1985, 426 homes were sold with an average sale price of \$58,213.00 (Wesley Day and Company, Des Moines, Iowa).

Approximately 453 apartment rental units were available in Des Moines in 1984, with an average rent of \$313.00 for one-bedroom, \$363.00 for two-bedroom and \$539.00 for three-bedroom. Within the project area and nearby there were 247 available rental units. Average rent for these units was from \$263.00 to \$320.00 for one-bedroom, \$304.00 to \$334.00 for two-bedroom and \$360.00 to \$439.00 for three-bedroom (1984 Apartment Occupancy Survey, Wingar-Johnson & Associates, Des Moines). Many of the

apartment units that will be displaced by the project rent for below these average rents. Thus, it is anticipated that displaced renters will have difficulty in finding a comparable dwelling for the same rent they would be currently paying. They would be eligible for the rental replacement housing payment described above.

The 2000 Land Use Plan encourages new residential development (primarily multi-family) in the central area neighborhoods including the CBD area. A senior citizen's residence, Elsie Mason Manor, and a rental housing project, Civic Center Courts, were recently completed within the CBD core area. There are no immediate plans for subsidized housing units in the central city area (Des Moines Public Housing Authority).

In light of the above, "last resort" housing is not expected to be required for this project. However, if adequate replacement housing within financial means is not available at the time right-of-way negotiations begin, then "last resort" housing will be applied. Programmed replacement housing as a "last resort" is provided for under Section 206 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. This Act stipulates that if the local agency determines it is in the public interest to proceed with the construction of the Federal-Aid project and it cannot do so because of an inadequate supply of comparable replacement housing, then it may, as a last resort, provide the necessary housing by use of funds authorized for the highway project.

#### Relocation of Non-Profit Organizations

The project will displace several structures that house non-profit organizations. The Preferred Alternative would displace five churches. Alternatives A and B would displace these five churches and an office of the American Red Cross.

The churches that would be displaced by the project are listed in Table 5.9 and indicated on the aerial map (Plates 8 and 12, Appendix C).

Discussions with representatives from four of the churches have indicated that their congregations are all small, but come from all areas of the city rather than solely from the immediate neighborhood. These structures are located near S.E. 14th Street in an area where land use is currently a mixture of commercial, industrial and single-family residential. Future land use for this area is planned industrial (Figure 4.8).

The displacement of these churches from this area is not predicted to have a negative impact because of the surrounding



land usage and because they do not particularly serve the local neighborhood. Their relocation in a more suitable land-use setting would most likely be beneficial to the congregation. However, there may be negative impacts to some individual members of the congregation who live nearby or who have long-term attachments to the structure or its surroundings.

The church located in the vicinity of Indianola Avenue is much larger, serving approximately 200 families from a large area of the city. Church representatives have expressed a desire to relocate to another location.

These non-profit organizations would be eligible to receive payments for actual reasonable moving expenses, direct losses of tangible personal property, and reasonable expenses not to exceed \$500.00 incurred while searching for a replacement site. During the design period, it will be attempted to provide notification to these groups to allow them sufficient lead time to relocate.

If the non-profit organization cannot be reestablished at another location, it may be eligible for a fixed payment, not to exceed \$2,500.00 in lieu of actual moving expenses, if the state is convinced that:

1. The organization cannot relocate without a substantial loss of its existing patronage; and
2. The organization is not part of a commercial enterprise with one or more similar organizations not being acquired.

#### Commercial Relocation Impacts

The displacement of businesses and industries from the area will be an economic impact of the project. This displacement can also have social impacts on the neighborhood in which it occurs, particularly if the business provides local services.

The Preferred Alternative will displace 42 businesses and 7 warehouses. These businesses and warehouses employ an estimated 420 employees (1986 data). Table 5.10 presents a breakdown of the types of business affected for the Preferred Alternative. The other alternatives would displace from 48 to 63 businesses.

The businesses displaced by the Preferred Alternative are primarily very small; most employ less than 10 persons. The largest employer, a manufacturer, has 61 employees. These businesses include the following types: construction, construction materials, textile manufacturing, paper manufacturing, iron works, truck painting, scrap metal, welding, plating, laundry equipment distributor, auto repair, auto parts, tire sales,

restaurant equipment distributor, restaurant, tavern, motel, day care center, insurance and chemical supplies. Two of these businesses are minority-owned businesses: a fencing company and a painting company.

Most of these businesses serve clients throughout the city, rather than providing neighborhood services. The restaurants, taverns and day care center are the only businesses that would provide localized service. Therefore, these business displacements are not expected to have major impacts on the adjacent neighborhoods. A more detailed discussion of these businesses is provided in the subsequent discussion of neighborhood impacts.

An additional nine businesses would be displaced by Alternatives 1A and 1B at the interchange with Ingersoll Avenue in the north-south segment. These include a greenhouse, two restaurants, a dry cleaners, beauty shop, public relations firm, pest control, auto parts and engineering offices.

Both subalternatives of Alternative A would displace 12 additional businesses between 14th and 19th Streets. These include two taverns, four auto repair shops, a shoe repair shop, a deli, a sign company, a railroad office, a vacant building and a bingo establishment.

The major adverse impacts of these displacements will be on the owners and employees, particularly if the business does not relocate elsewhere. Some inconvenience will be experienced by the customers of these businesses as they will have to locate the products or services elsewhere.

The owner of a business will have the option of ceasing operation or relocating. Many of these businesses are expected to relocate and remain in operation within the metropolitan area. However, some of the smaller businesses may be forced to discontinue because of lack of comparable rental space or other reasons. In 1985 a considerable amount of commercial space was available for sale or rent in the project area. Rent varied from \$6.00 to \$8.00 per square foot. Some owner-operators may not wish to acquire high interest debts to relocate and may discontinue operating.

The owner-operator or tenant-operator of a business displaced for highway purposes who is in occupancy when negotiations start, is eligible for payment of actual, reasonable expenses, which include: 1) actual, reasonable expenses as a result of moving a business or other personal property; 2) actual or direct losses of tangible personal property as a result of moving a business; and 3) actual, reasonable expenses not to exceed \$500.00 incurred while searching for a replacement location.

In lieu of moving expenses, a business may be eligible for a fixed payment to cover moving the business. This payment equals the average net earnings of the business based on the income tax returns during the two taxable years preceding the taxable year in which the business must relocate. This payment shall not be less than \$2,500.00 nor more than \$10,000.00. Before making the payment, the State of Iowa determines that the business 1) cannot be relocated without a substantial loss of business; 2) is not part of a commercial enterprise with one or more similar businesses not being acquired by the state or the United States; and 3) contributes materially to a person's income if it is a part-time business. If the part-time individual or family occupation in the home does not contribute materially to their income, they are not eligible for this payment.

#### NEIGHBORHOOD IMPACTS

Both Alternatives A and B will pass through portions of six neighborhoods in the central area of Des Moines. These neighborhoods are those used by the city for planning purposes and do not necessarily represent neighborhoods in the usual sense. Population and housing characteristics for the affected census tracts and blocks within each of these neighborhoods were discussed in the preceding section on residential relocation impacts. Census data for tracts and blocks appears in Tables 5.2-5.7. These tables also indicate the corresponding neighborhood that would be affected. A breakdown of some of these population and housing characteristics for affected blocks within each neighborhood appears in Table 5.8.

These data indicate that the largest number of displacements associated with the Preferred Alternative of the CBD Loop project will occur in the Callanan Neighborhood (285), followed by the Willard Neighborhood (121). The displacements in the Callanan Neighborhood will be primarily those living in multi-family dwellings. The greatest number of single-family dwellings (40) and owner-occupied dwellings (28) will be displaced in the Willard Neighborhood. Affected blocks within the Callanan, Willard and Weeks Neighborhoods contain higher percentages of non-whites than do those in other affected neighborhoods.

The following paragraphs discuss impacts to each of these neighborhoods. Maps of the neighborhoods appear in Figures 5.1, 5.2 and 4.3. In addition, the reader is referred to the aerial maps (Plates 1-12, Appendix C). All of these maps indicate the location of the CBD Loop alignment. As the impacts of each of the CBD Loop alternatives are identical in all of the neighborhoods except for minor differences in the Callanan and Downtown Neighborhoods, the following discussion compares alternatives only for these neighborhoods.



## Callanan Neighborhood

### Description

Callanan Neighborhood would be more affected by the project than would the other neighborhoods. It is an old, central city neighborhood located to the west and northwest of the downtown area (Figures 4.3 and 5.1). The western part of the neighborhood contains stable areas with some new development, while the eastern area houses a more transitional population and has undergone deterioration. It is this eastern area that would be directly affected by the CBD Loop project.

One of the first developments in the eastern area was Woodland Cemetery, which was originally established as a rural, romantic cemetery in the 1850s. Residential development soon followed, and some of the most prominent Des Moines residents lived in the area east and south of Woodland Cemetery in the late 1800s and early 1900s.

Today parts of this area are deteriorating, and many of the larger homes have been turned into apartments. One 20-block area to the east of Woodland Cemetery has been listed on the National Register of Historic Places, the Sherman Hill Historic District (Figure 4.5 and Plate 1, Appendix C). Recently, considerable interest in the preservation of this area has developed, and residents from other areas of the city are purchasing and restoring homes here. Residents and property owners have formed an association and developed a revitalization plan for the area ("Sherman Hill, Doors to the Past, Windows to the Future," Sherman Hill Association, Inc., October, 1981). The State Historic Preservation Officer has recently recommended that the western boundary of the historic district be extended to Woodland Cemetery. There are also several structures along Grand Avenue in this area that are listed on the National Register of Historic Places including Terrace Hill, the governor's mansion.

Because of substandard housing and low-income, most of the area around Woodland Cemetery is included in the Woodland-Willkie Target Area (refer to pages 4.6, 4.7 and Figure 4.3). The 1980 Census reported that 34 percent of the families in Census Tract 27 (the tract that includes the Sherman Hill area) had income that was below the poverty level. The median income in 1979 for families in this tract was \$8,581.00.

The non-residential land use in the area affected by the project includes a small commercial area in the Crocker Street-Cottage Grove Avenue area and a strip commercial development along Grand Avenue and Ingersoll Avenue. Parks and public/semi-public uses include a church, a technical high school, school

athletic field, Woodland Cemetery and a small neighborhood park, Chamberlain Park.

Future land use proposed for this area includes commercial, medium-density and high-density residential, and public and semipublic (Figure 4.8).

The alignment of the CBD Loop would pass along the eastern edge of Woodland Cemetery and would cross the edge of the single-family and multi-family residential areas. It would also pass through the two commercial areas described above and immediately adjacent to the park and athletic field.

### Residential Displacements

The eleven census blocks that would be affected by displacements of residents have a population of 662 (1980 Census). These blocks contain higher percentages of non-white householders and persons under 18 years of age than does the city as a whole (Table 5.5). There is a lower percentage of owner-occupied housing units than for the city as a whole (Tables 5.6 and 5.7).

The majority of residential displacements by the CBD Loop project will occur in this neighborhood. Approximately 62 percent (285) of the displaced population and 67 percent (121) of the displaced housing units will occur here (Table 5.8). Only 13 percent are single-family dwellings. It is estimated that the displaced population will consist of 44 percent non-white householders. The above figures apply to the Preferred Alternative. Alternatives 1A, 1B, 2A and 2B would displace more people (up to 383) and housing units (up to 161), but the percentages cited above would be about the same.

The housing structures displaced include 16 single-family dwellings, eight apartment buildings and three large single-family dwellings that have been converted to apartments. All of the single-family dwellings were constructed between 1870 and 1920. Two of the apartment buildings were constructed in the 1920s; the rest are modern structures dating from the 1960s to 1970s. On-site observations of the exterior of these structures was conducted in 1982. Most appeared to be in only fair physical condition, with a few being rated in good condition (Appendix Volume II, "Cultural Resources of the CBD Loop Arterial Project Area, History and Architecture").

None of these structures are considered eligible for the National Register of Historic Places. Twenty-three of these structures were identified as contributing to the significance of the Sherman Hill District (refer to section on "Impacts to Historic, Archaeological and Architectural Resources"). The Memorandum of Agreement developed for this project proposes that these

properties will be made available to the public for purchase and relocation within an historic district. Prior to relocation or demolition, they will be documented following federal guidelines (refer to Appendix E).

Alternatives 1A and 1B would displace an additional nine single-family dwellings and five apartment structures (one of which is considered eligible for the National Register of Historic Places). Alternatives 2A and 2B would displace four single-family dwellings more than the Preferred Alternative and three more apartment structures, none of which are eligible for the National Register.

The number of displaced structures considered as contributing to the significance of the Sherman Hill District would be 23 for the Preferred Alternative and 31 or 27 for Alternatives 1A, 1B or 2A, 2B, respectively.

#### Other Neighborhood and Land-Use Impacts

Impacts of the project in this area include both positive and negative effects on the neighborhood and on land usage. The alignment will widen the barrier between the Sherman Hill residential area and the open space area provided by Woodland Cemetery (Plates 2 and 3, Appendix C). Existing Harding Road has high traffic volumes and currently has a barrier effect in the same alignment as the proposed CBD Loop. The CBD Loop would have greater traffic volumes than now exist or than are predicted for the No Action alternative. The CBD Loop project is predicted to increase noise levels in this area. This impact is discussed later in this section under "Noise Impacts." A landscaped berm or wall will be designed to serve as a buffer and for noise abatement along the east side of the facility between Crocker Street and Woodland Avenue.

The project is expected to reduce through-traffic and the associated traffic noise on streets within the area. Several streets will be closed at their intersection with Harding Road including Crocker, Leyner, Center and Pleasant. These closures will have a positive benefit on the neighborhood environment.

The project will affect existing residential land usage by changing the strip of land along Harding Road that is now single-family and multi-family residential to a non-residential usage. This impact is not considered significant as it passes on the edge of a residential area and does not split the area. Also, the strip of land taken for highway purposes has commercial uses interspersed within the residential.

The project is anticipated to have a beneficial effect on the future land use of the area and to be consistent with the

land-use policies of the city. The 1990/2000 Land Use Plan calls for medium-density residential and high-density residential for this area. The plan also encourages the location of high-density housing along major thoroughfares. It discourages commercial development within residential areas and along major thoroughfares. The design of the CBD Loop project in this area will facilitate these land-use goals.

#### Impacts to Churches and Schools

The project is not expected to have negative impacts on churches in the neighborhood. It is expected to reduce the amount of traffic adjacent to Kingsway Cathedral (19th and Crocker Streets) and improve access to this church somewhat. Nineteenth Street is currently a one-way, northbound roadway which will become two-way after the CBD Loop is constructed (see Plate 1, Appendix C). Predicted exterior noise levels will be greater than existing levels with the project but would also be this high with the No Action alternative.

The project alignment crosses an area where heavy school pedestrian traffic to and from Edmunds Elementary School passes. Pedestrian signals will be provided at the intersections of Cottage Grove Avenue and the two legs of the CBD Loop (refer to Plate 2, Appendix C).

The project will pass by Des Moines Technical High School (Grand Avenue and 18th Street). Approximately 300 people use this facility, including students at the high school, as well as the administrative staff for the Des Moines School System. Consultation with staff of the Des Moines Board of Education have indicated that their long-range plans call for the continued use of this facility, with possibly some reduction in staff. Approximately one-fourth of a parking lot for this facility will be required for the project right-of-way, involving an estimated 50 parking spaces.

A positive impact of the project will be to greatly relieve traffic congestion on Grand Avenue and 18th Street. Existing traffic volumes are predicted to be reduced by about two-thirds after the CBD Loop project is in operation. Year 2000 noise levels are predicted to be about 5 dBA lower with the CBD Loop than with the No Action alternative. Pedestrian safety will be improved around the high school with this reduction in traffic congestion.

#### Impacts to Commercial Areas

The Callanan Neighborhood will experience the greatest number of commercial displacements of all the neighborhoods. Two commercial areas in this neighborhood would be affected by the



project: the Crocker Street-Cottage Grove Avenue area and the Ingersoll Avenue-Grand Avenue area. This commercial node is located in the Sherman Hill area. Many of the structures are deteriorated, and there is a high vacancy rate. Most of the businesses do not provide neighborhood-oriented services.

The master plan prepared for the Sherman Hill Association, Inc., recommends that this area be revitalized and restored to be compatible with the historic character of the Sherman Hill area. Landscaping and other design features are recommended for this area to provide an attractive entrance into the Sherman Hill area. The master plan also recommends that the CBD Loop be restricted to the Harding Road alignment and not impact the commercial area.

The CBD Loop alignment would pass through this commercial area. The Preferred Alternative would remove 12 of the businesses in this area. Only two of these businesses are neighborhood-oriented: two taverns. Three of these commercial structures were vacant in late 1986. The removal of these businesses is not expected to have a significant effect on the Sherman Hill neighborhood. The project will remove the western half of this proposed restoration and revitalization area. Two of these structures were constructed between 1910 and 1935 and are listed as contributing structures; i.e., they contribute to the architectural and historic significance of the historic district. The Memorandum of Agreement regarding historic preservation states that these two structures will be documented prior to demolition. During the design of the project, the city staff will coordinate the removal and demolition plans for these structures with the Sherman Hill Association, Inc.

The Ingersoll Avenue-Grand Avenue commercial area consists of strip developments along these two major thoroughfares with a diversity of retail and wholesale establishments and professional offices. Five businesses would be displaced from this area. Only one is neighborhood-oriented: a restaurant. The removal of this business is not expected to have a significant impact on the neighborhood.

#### Public Input and Neighborhood Planning

During the planning stages of the project, meetings with the Woodland-Willkie Neighborhood Priority Board and the Sherman Hill Association, Inc., were held (see Section 6, Comments and Coordination). These groups expressed concern about being isolated from Woodland Cemetery and about the potential for pedestrian safety while crossing the CBD Loop to reach the cemetery, particularly since the cemetery is used as a play area by children. There were generally positive attitudes toward the closing of local streets at their intersection with the CBD Loop.

Other fears about the project that were expressed by the residents of the area included increased noise levels, destruction of historic structures and relocation of people. Members of this neighborhood area are particularly sensitive to highway impacts because I-235 (MacVicar Freeway) had recently been constructed through the area, and it was felt that noise impacts and relocation of people had not been adequately mitigated for that project.

According to residents and property owners in the area, another impact which has already resulted from the project has been the long period of uncertainty about the project. A corridor along Harding Road has been part of the city plans for a number of years, and property owners along Harding Road have been reluctant to improve their property because of the fear that their investment would not be recovered when the property was acquired for right-of-way. Most of these properties are rental properties, and some are vacant. Residents of the area expressed the belief that the deterioration of these properties has had a negative effect on the property values of the rest of the neighborhood.

Recommendations regarding the proposed arterial were made by the Sherman Hill Association, Inc., in their report "Sherman Hill, Doors to the Past, Windows to the Future," October, 1981. In this report the ideal option for this area was described as one that locates the traffic corridor elsewhere. However, the report recognized that it is likely that the corridor will pass in the vicinity of Sherman Hill. To minimize its impacts, the following recommendations were made:

1. Locate the facility at the extreme western edge of the neighborhood, following the general alignment of Harding Road.
2. Depress the facility as much as possible.
3. Incorporate landscape buffering and park facilities into the design. A strip park is recommended to run without interruption from Cottage Grove Avenue south to Woodland Avenue. Abicycle path and pedestrian path would run the park's length, and a pedestrian connection at Center Street is recommended.
4. Limit access from a number of the east-west streets in the district.

The Preferred Alternative incorporates these recommendations with these exceptions:

The eastern branch of the one-way north-south couplet of the arterial would pass through the Cottage Grove commercial area rather than to the west of it.

The pedestrian link to Woodland Cemetery would be located at Woodland Avenue rather than Center Street.

The strip park concept with pedestrian and bicycle paths is not part of the proposed project. However, a landscaped berm or wall will extend from Woodland Avenue to Crocker Street and serve as a buffer between the arterial and the neighborhood.

During the design phase of the project, the planners will work closely with the Woodland-Willkie Neighborhood Priority Board and the Sherman Hill Association, Inc., to arrive at a mutually agreeable design for the arterial and the buffer area in the vicinity of the Sherman Hill area.

### Willard Neighborhood

#### Description

Willard Neighborhood is an older neighborhood located to the south and east of the downtown area (Figures 4.3 and 5.2). The residential areas are relatively stable and consist of primarily single-family housing. Many of these areas have deteriorated, however, and are in need of rehabilitation. Most of the area was platted from 1850 to 1890. Approximately 76 percent of the housing was built before 1940.

Because of substandard housing and low-income, a considerable area in the eastern and north-central part of this neighborhood is included in the Pioneer-Columbus/Southeast Target Area (refer to discussion on pages 4.6 and 4.7 and Figure 4.3).

There is more industrial land usage in this neighborhood than in any of the others in Des Moines (23 percent of the land in 1976). It is expected that this usage will continue. There is also considerable vacant land where industry is expected to expand. It is estimated that 31 percent of the land will be devoted to industrial purposes in the future (1990/2000 Land Use Plan, Des Moines Plan and Zoning Commission, 1978).

The part of the neighborhood that would be directly affected by the CBD Loop project is located in the extreme eastern area to the south of downtown and the state capitol complex (Figure 4.3). The majority of this area is a very old, stable residential area that has been referred to as the Roadside Area since the late 1800s. This includes the area south of Raccoon Street and west of S.E. 14th Street. The rest of the project area is a small strip located east of and adjacent to S.E. 14th Street. The

homes in this area are not as old, dating from the 1920s. Both of these areas contain modest homes and have traditionally housed blue-collar workers.

This area is also referred to as the Southeast Bottoms for it lies on lowland within the former flood plain of the Des Moines River. An earthen flood control dike now borders the river throughout this area. A high river bluff on which the State Capitol Complex is situated lies to the north of this area.

Major through traffic in the area moves north and south along S.E. 14th Street and S.E. Sixth Street. S.E. 14th is a four-lane roadway and is a major thoroughfare for the east side of the city. It also serves as U.S. Highways 65 and 69. East-west through traffic moves primarily on Scott Avenue and Maury Street.

Other nonresidential land uses in the area affected by the project include a commercial strip along S.E. 14th Street and commercial and industrial development along Raccoon Street. Small parcels of industrial and commercial usage are scattered throughout the area. Park and public/ semipublic uses include nine churches, three neighborhood parks and public open space along the Des Moines River. There is a considerable number of small vacant parcels scattered throughout the area (Figure 4.7).

Future land use proposed for the Roadside Area includes medium-density residential south of Raccoon Street and east of S.E. Sixth Street, industrial to the north and west of this residential area, and commercial and industrial along S.E. 14th Street. The area east of S.E. 14th is proposed for industrial, with no residential usage (Figure 4.8).

The affected area includes parts of Census Tracts 36 and 38. The 1980 Census reported that 20 percent of the families in Census Tract 36 and 33 percent of the families in Census Tract 38 had incomes that were below the poverty level. The median income in 1979 for families in these tracts was \$10,865.00 (Tract 36) and \$8,542.00 (Tract 38) (Table 5.4).

The land that would be required for the CBD Loop project right-of-way includes portions of 17 census blocks containing 71 housing units. These blocks contain a higher percentage of non-white householders than does the city as a whole (Tables 5.7 and 5.8). Age groups and housing data for these blocks are not available because much of the data for these blocks was suppressed due to small numbers per block. However, the census tract data indicates that somewhat higher percentages of those under 18 and over 65 reside in this larger area (Table 5.2). A slightly higher percentage of owner-occupied housing units occurs in these census tracts than in the city as a whole (Table 5.3).



## Residential Displacements

The Willard Neighborhood will have the second largest number of residential displacements by the CBD Loop project. It is estimated that 121 persons and 40 housing units will be displaced from this area by the Preferred Alternative (Tables 5.1 and 5.8). Approximately 70 percent of these housing units are owner-occupied and all are single-family dwellings. It is estimated that the displaced population contains a relatively high percentage of non-white householders (37 percent).

There are 40 single-family dwellings that would be displaced by the project. Over two-thirds of these structures were constructed between 1870 and 1900. Most of these are 1- or 1-1/2 story wood frame houses. The 1982 architectural/historical survey of this area reported that few of these structures were in good condition and most were altered in some way. None of these were determined to have architectural or historical significance (Appendix Volume II, "Cultural Resources of the CBD Loop Arterial Project Area, History and Architecture", 1982).

## Other Neighborhood and Land-Use Impacts

The alignment of the CBD Loop passes along Raccoon Street between the residential area to the south and the commercial/industrial area to the north. In the vicinity of S.E. 14th Street it curves to the south to Scott Street, passing on the edge of the residential area. To the east of S.E. 14th Street it passes through a mixed residential and commercial area.

Impacts of the project in this area include both positive and negative effects on the neighborhood and on land usage. The alignment will strengthen the boundary between conflicting adjacent land usages along Raccoon Street. It will serve as a buffer to the residential area, separating it further from the commercial/industrial area. During the design phase of the project, landscape design for the project right-of-way in this area will be developed that will enhance this buffer effect.

The project will improve access to the southwest and northwest areas of the city for the residents in this neighborhood. Accessibility to the various public facilities and services located in the downtown west area will also be improved.

On the other hand, the project will result in greatly increased traffic volumes on the Raccoon Street alignment than currently exist. Average daily traffic volumes are predicted to range from about 14,000 to 21,000, depending on the alternative. These volumes will result in significant increases in noise levels in the area (refer to discussion of "Noise Impacts" later in this section and to Plates 15-18, Appendix C).

Similarly, high traffic volumes will be introduced along S.E. 15th Street, a street that currently has very little traffic. Average daily traffic volumes are predicted to range from about 24,500-25,700. As there are very few homes in this area and future land use is proposed to be industrial, the effect of increased traffic volumes in this area is not considered to be significant.

On the positive side, the diversion of through traffic from local streets to the CBD alignment is predicted to result in less traffic and lower noise levels within the residential area. For example, average daily traffic volumes on Maury Street are predicted to be 530 for all of the construction alternatives, compared with 6,850 for the No Action alternative (Table A.1, Appendix A). The removal of heavy truck traffic is also expected to benefit the neighborhood. It is anticipated that the reduction in traffic within the neighborhood will enhance neighborhood cohesiveness.

Many of these local streets will also be closed where they encounter the CBD Loop alignment. These closures will also serve to reduce traffic on these streets. Seven north-south streets in this area will be closed, including: S.E. Second, S.E. Third, S.E. Fifth, S.E. Seventh, S.E. Eighth, S.E. Tenth and S.E. 14th Street Court. These closings will result in some changes and inconveniences to the north-south travel patterns of the residents. Three east-west streets will be closed at their junction with S.E. 14th. These are Railroad Avenue, Scott Avenue and Harriet Street. This effect is anticipated to be minor.

#### Impacts to Churches and Schools

The project will have negative impacts on several of the churches in the area (Table 5.9). Four of these churches will be displaced by the project. These churches are: All Nations Church of God in Christ, Jesus Assembly Church, King of Kings, and Southeast Assembly of God. All of these are located in the area east of S.E. 14th Street (refer to Figure 4.2 and Plate 18, Appendix C for locations). All of these are small churches that have members from both the local area and other parts of the city.

The displacement of these churches is expected to have some negative impacts on the local neighborhood. Relocation assistance and reimbursement for property losses will be provided to each church (refer to earlier discussion in this section on "Relocation of Non-Profit Organizations"). There is considerable vacant land elsewhere in this area where these churches could relocate. As the area where they are now located is proposed for future industrial usage and residential usage is to be phased

out, it should benefit these churches to relocate to an adjacent residential area.

Although not displaced by the project, two other churches in the area will be negatively impacted by the project. Shiloh Baptist Church, 1213 Scott Avenue, will be bounded by the main CBD alignment as well as the on and off ramps for the facility (refer to Plate 12, Appendix C). Accessibility by auto from the local area will be severely affected because entrance and departure will only be possible from the one-way eastbound land of the CBD Loop roadway. Also, pedestrian accessibility from the local area will be difficult. The church will also be exposed to higher traffic volumes and noise levels than now exist (refer to "Noise Impacts" later in this section). These volumes and noise levels apply to peak traffic periods which are not expected to coincide with the major times of church activity.

The other church affected by the project is Sheltering Rock Church, 718 S.E. Allen Street (refer to Plate 10, Appendix C, for location). Pedestrian and auto accessibility from the local area will not be negatively affected. It will be improved somewhat for those driving from other areas of the city. The church will be exposed to higher noise levels than now exist. The predicted existing interior noise level is 36 dBA (Leq), as is the predicted interior level for the No Action alternative. With the CBD Loop project, interior levels would be 43 dBA (Leq), well below the criterion of 52 decibels.

No schools will be impacted by the project in this area.

#### Impacts to Commercial Areas

The commercial and industrial concerns in the project area are primarily small manufacturing or construction-related firms. The structures that house these are generally small and unobtrusive and were built fairly recently (after 1940), compared to the residential structures.

The CBD Loop project will displace 14 of these businesses and one warehouse. Seven of these are located along Raccoon Street, and six are located along the alignment proposed for the E. 15th Street Extension. Only one of these provides neighborhood-oriented services: a restaurant.

The remaining commercial and industrial establishments are expected to benefit from the project. Increased accessibility will be provided to these areas north of Raccoon Street and east of S.E. 14th Street. The 2000 Land Use Plan proposes increased industrial and commercial development for these areas, and the CBD Loop project will help promote this development.

Some of the businesses along S.E. 14th Street between Scott Avenue and Harriet Street may have decreased accessibility as a result of the project. These businesses currently are accessible from the two-way S.E. 14th Street. The CBD Loop project will result in S.E. 14th Street as a one-way, southbound roadway (refer to Plate 12, Appendix C). During the design phase of the project, accessibility to this area from both directions will be provided where feasible.

### Public Input

Input to the project from residents and property owners in this area was received during a public meeting that was held on August 18, 1981, in a church in the area. Representatives of the city presented the various alignments that were under consideration and asked for feedback on these and on sensitive sites in the area.

There was general concern expressed regarding the taking of homes as apparently many of the residents have lived here for a number of years. There was considerable concern regarding the fate of the many small churches that are located in the area. There were positive reactions to an alignment along Raccoon Street as opposed to one along Maury Street or Scott Avenue. The diversion of traffic from these two streets to the Raccoon Street alignment was seen as a benefit to the neighborhood. However, several owners of the small businesses along Raccoon Street were present and objected to this route as it might displace their buildings.

### Hiatt Neighborhood

#### Description

Hiatt Neighborhood will only be slightly impacted by the project. It is an older, central city neighborhood located immediately north and east of the State Capitol (Figures 4.3, 5.1 and Plate 17, Appendix C). Approximately 88 percent of its houses were built before 1940, and many date from the late 19th Century. An architectural/historic area has been identified immediately north of Court Avenue (Figures 4.5 and 5.1).

Like other central city areas, much of the housing has deteriorated and is considered substandard, and many of the residents are in low-income brackets. Most of the neighborhood has been included in the Logan Target Area (refer to discussion on pages 4.6 and 4.7 and Figure 4.3).

Approximately 42 percent of the land usage is residential (1976 data). The majority of residences are one- or two-story



wood frame, single-family dwellings. Future land-use plans call for medium-density residential usage in the area.

The area affected by the CBD Loop project is located in the southwest corner of the neighborhood. Existing land usage is almost entirely single-family residential (Figure 4.7). One church occurs in the area. The through routes in the area are along Court Avenue and S.E. 14th (U.S. Highways 65 and 69). The affected blocks lie on a bluff overlooking S.E. 14th and are not directly connected to this major roadway. Future land use proposed for this area includes Medium-Density Residential (Figure 4.8).

The affected area is within Census Tract 37. During 1979, 16.6 percent of the families in this tract had incomes below the poverty level. The median income for families was \$12,440.00 (Table 5.4).

The land that would be required for the CBD Loop project includes portions of two census blocks containing 43 housing units. These blocks contain a high percentage of non-white householders and a lower percentage of owner-occupied housing units than does the city as a whole (Tables 5.7 and 5.8).

#### Residential Displacements

It is estimated that 41 persons residing in 13 housing units will be displaced by the project. Ten of these are single-family homes, eight of which are owner-occupied. All of these structures are modest, wood frame homes built before or around the turn of the century. None of these were determined to have architectural or historical significance (Appendix Volume II, "Cultural Resources of the CBD Loop Arterial Project Area, History and Architecture," 1982).

#### Other Neighborhood and Land-Use Impacts

The alignment of the CBD Loop will pass through a single-family residential area that currently has very little traffic. The only through street in the area is Court Avenue. Existing traffic volumes on this section of Court Avenue are 5,750. Future predictions with the No Action alternative are for 4,560 vehicles per day. The proposed project is expected to carry from 28,800 vehicles per day through this area.

It also will be isolating about 12 single-family residences from the rest of the neighborhood by a one-way northbound roadway (Plate 11, Appendix C). Negative effects on neighborhood cohesion and on pedestrian and bicycle safety are predicted to result from this alignment.

Noise levels of up to 69 dBA will be introduced into this area (Table 5.21). Approximately 22 homes would be exposed to noise levels greater than 67 dBA. Noise walls would not be effective in this area because of the presence of intersections. A noise barrier was analyzed for effectiveness in the area north of Court Avenue but was found to be ineffective (refer to "Noise Impacts" later in this section).

A pedestrian crossing signal at E. 15th Street and E. Court Avenue will be included in the project. Landscaping will be designed for the highway right-of-way through this area to provide a visual buffer for the residential area.

#### Impacts to Churches and Schools

The project is expected to have both negative and positive effects on the church in this area (Vine Street Gospel Chapel). The church will be exposed to interior noise levels of 45 dBA. The project will greatly increase the accessibility of the church from the southern areas of the city. It will also greatly increase the visibility of the church, an effect generally considered to be a positive one for churches.

No schools will be affected by the project in this area.

#### Impacts to Commercial Areas

No commercial areas will be affected by the project in this area.

#### Weeks Neighborhood

##### Description

Weeks Neighborhood is a mixture of older, stable, central city areas located in the western and northwestern parts and newer, rapidly growing areas located in the east and southeastern parts (Figures 4.3 and 5.2). This neighborhood has more land available for development than any other neighborhood in the city, and residential development is expected to double in size by the year 2000. Very little commercial or industrial growth is proposed for the area, however.

Current land use is primarily single-family residential. Because of substandard housing and low-income levels of residents, most of the northwestern area of this neighborhood is included in the Pioneer-Columbus/Southeast Target Area (refer to discussion on pages 4.6 and 4.7 and Figure 4.3).

The part of the neighborhood that would be directly affected by the CBD Loop project is located in the extreme northwestern

corner, immediately south of the Raccoon River. This area is the oldest in the neighborhood and contains single-family residences, most of which were built from 1880 to 1920. The houses are of modest size and style.

Other land usages include light industrial west of S.W. First Street, a commercial strip along the major thoroughfare in the area, Indianola Avenue, and small, scattered parcels of vacant land. Park and public and semipublic uses include two churches, a neighborhood park and public open space along the Raccoon River (Figures 4.2, 4.5 and 4.7). Future proposed land usage calls for industrial, medium-density, residential and commercial (Figure 4.8).

Major through traffic in the area is north-south along S.E. First and east and west along Indianola Avenue. A heavily used track of the Chicago & North Western Railroad passes through the area from southwest to northeast.

The area was the site of the second major area of Italian settlement in the city beginning in the 1920s. St. Anthony's Roman Catholic Church, located at the corner of S.W. First and Indianola Avenue is still considered the most important symbol of Italian-American culture in Des Moines (Appendix Volume II, "Cultural Resources of the CBD Loop Arterial Project Area, History and Architecture", 1982).

The affected area occurs within Census Tract 42. The 1980 Census reported that 14.8 percent of the families in this tract had incomes that were below the poverty level. The median income for families in this tract was \$28,432.00 (Table 5.4).

The land that would be required for the CBD Loop project right-of-way includes portions of four census blocks containing 25 housing units. These blocks contain a higher percentage of non-white householders than does the city as a whole (Tables 5.7 and 5.8).

#### Residential Displacements

It is estimated that 19 persons will be displaced by the Preferred Alternative from seven housing units in this area. Five of these housing units are owner-occupied and five are single-family dwellings (Tables 5.1 and 5.8). The single-family dwellings were built around the turn of the century. The 1982 architectural/historical survey reported that these structures were not historically or architecturally significant.

## Other Neighborhood and Land-Use Impacts

The alignment of the CBD Loop would pass between S.W. First and S.W. Second Streets between Jackson Avenue and Indianola Avenue (Plate 14, Appendix C). It will separate a primarily industrial area to the west from the residential area to the east. Only a few residents occur west of the alignment.

This alignment is expected to have positive effects on neighborhood conditions and existing land usage in the area. It will have a buffer effect between the residential and industrial areas. It will also promote proposed future land usage as it will be passing through an area proposed for Planned Industrial.

Another positive effect of the project will be the diversion of traffic from S.E. First Street to the CBD Loop. This street passes through the heart of the residential area and carries daily traffic volumes of 12,200. It is predicted that traffic volumes on this street after the CBD Loop is constructed will drop to 3,830 per day. Under the No Action alternative, future traffic volumes are predicted to be 13,860 (Table A.1, Appendix A).

Other local streets are also expected to experience reduced traffic volumes. These include S.E. Sixth and Hartford Avenue. A reduction in traffic noise and motor vehicle emissions along these local streets is also predicted. The project is also expected to facilitate new residential development in the southeastern areas of the neighborhood (E. of S.E. 14th) by providing improved access to the major employment centers in the CBD.

## Impacts to Churches and Schools

One church in this neighborhood, Clifton Heights Presbyterian Church, would be displaced by this project. This church serves a large area of the city and has expressed an interest in relocating to another area.

The project will result in somewhat greater traffic volumes and noise levels than would the No Action alternative along Indianola Avenue in the vicinity of St. Anthony's Catholic Church and School (Figure 4.2 and Plate 8, Appendix C). Small amounts of property from the church may be required, but the buildings will not be affected. Access by vehicle to the church will be slightly poorer than under current conditions because of the closure of S.W. First and the presence of a median along Indianola Avenue.

Pedestrian accessibility is expected to be slightly improved because of the reduction of traffic volumes along S.E. First and



other local streets. However, pedestrian accessibility will be impaired for those approaching from the south of Indianola Avenue. A pedestrian crossing of Indianola Avenue in the vicinity of the church and school would be included in the design of this project. Reduction of traffic volumes along Hartford Avenue should result in increased school pedestrian safety in the vicinity of Washington Elementary School (Hartford and S. Union Road).

#### Impacts to Commercial Areas

The CBD Loop will displace five business concerns in this area: a construction-related firm, a restaurant, an auction outlet, a vacant business structure and a day care center. The restaurant and day care center provide local services to the neighborhood, and their removal could have negative effects on some residents of the area.

#### Downtown Neighborhood

##### Description

The Downtown Neighborhood includes the downtown areas on both the east and west sides of the Des Moines River, the State Capitol area, industrial areas south of downtown and scattered housing, primarily multi-family (Figures 4.3 and 5.1).

The Downtown Neighborhood includes the oldest part of the city; much of the land was platted in the 1850s to 1860s. One area in the vicinity of Court Street has been proposed as an architectural/historic district (refer to Figure 4.5). The site of the old Fort Des Moines in the vicinity of Elm Street and Court Avenue is currently being proposed as eligible for the National Register of Historic Places.

Although maintaining a high population of office workers, the downtown experienced a decline in residential population and retail activities in the 1960s and 1970s. However, it has recently undergone revitalization; and considerable new construction or renovation of office buildings, housing and community facilities has taken place. It has remained the major employment center for the SMSA over the years.

The area affected by the project is a strip running east-west just south of the downtown area and a north-south segment crossing the Raccoon River near its confluence with the Des Moines River. In addition, only Alternative A would have a segment that curves through a commercial area west of the CBD core area referred to as downtown west.

Existing land use in the affected area is almost entirely commercial and industrial (Figure 4.7). Proposed land use is industrial, support commercial high-density residential and core fringe (Figure 4.8). An area in the vicinity of Locust and 15th Streets has been dominated by automobile-related commercial concerns since the 1920s.

The residential usage is scattered throughout the commercial area and consists of apartment buildings, upstairs apartments in commercial buildings and public housing projects. Only seven percent of the housing units were single-family dwellings in 1976 (1990/2000 Land Use Plan, Des Moines Plan and Zoning Commission, 1978). The residential population of only one census block containing 101 multi-family housing units will be affected by the project (Alternative A only). The population on this block contains a high percentage of elderly (46 percent) and no persons under the age of 18. Ninety-eight percent of the population is white. All persons live in rental housing, and most (83 percent) live alone (1980 Census Data).

#### Residential Displacements

The Preferred Alternative will not displace any residents in this area. Alternative A would displace 28 persons from 23 multi-family units in this area.

#### Other Neighborhood and Land-Use Impacts

Because the project is expected to reduce traffic congestion on many of the CBD streets, it will have positive effects on pedestrian safety and the general environment of the downtown area. Revitalization plans call for an increase in multi-family housing in the downtown area. Two housing projects have recently been completed in the CBD core area (Elsie Mason Manor and Civic Center Courts, Figure 4.5). The CBD Loop project is predicted to result in lower traffic volumes on streets adjacent to these two facilities. The CBD Loop is expected to help promote the development of a pedestrian-oriented downtown environment and the future development of multi-family housing here.

#### Churches, Schools and Public Facilities

The project will not affect any schools or churches in the Downtown Neighborhood. It will provide improved access to the community facilities and government offices in the CBD area for residents from the southeastern, western and southwestern areas of the city.

## Impacts to Commercial Areas

The project will provide improved accessibility to the retail concerns in the CBD from the southeast and southwest areas of the city. The reduction of through traffic in the CBD will enhance the area for pedestrian usage and is expected to make the area more of an attractant for shopping than it now is. The project will also improve accessibility for those who work in the CBD area.

The project is expected to improve accessibility for the industrial areas of the downtown located to the south on both sides of the Des Moines River. It is anticipated that redevelopment will occur in these industrial areas. Alternative B and the Preferred Alternative would have the greater positive effect on these industrial areas than would Alternative A.

The Preferred Alternative will displace two manufacturing concerns, two wholesale distributors, one truck painting business and six warehouses in this area. Alternatives A and B would have displaced 14 businesses and seven warehouses in this area. In addition, the Alternative A alignment would divide this area along 15th Street and would somewhat isolate the area between 15th and 19th Streets from the rest of the CBD. Several major employers occur in this isolated area, including Meredith Corporation (refer to Plate 5, Appendix C).

This area has recently been considered for possible expansion of the Capital Center Urban Renewal Area or for the location of a new tax increment district.

### Brody Neighborhood

#### Description

This neighborhood is a relatively younger one compared to the other affected neighborhoods. Most of the area has been platted since 1950, and there is a considerable amount of vacant, developable land. Most of the housing is single-family, and the future land-use plan calls for a continuation of this trend. There is a large amount of existing industrial development and future industrial growth is expected. The Des Moines airport is located off Fleur Drive.

#### Impacts

The project will not displace any residents, businesses or other structures. It passes through only a small northeastern part of the neighborhood located within the property of the Des Moines Water Works. It is expected to improve accessibility to

the downtown area for residents and businesses in the area. It is also expected to improve accessibility to the Des Moines airport and to other destination points in the neighborhood from the northern areas of the city.

#### IMPACTS TO CHURCHES, SCHOOLS AND SCHOOL PEDESTRIAN SAFETY

These impacts have been described separately by neighborhood in the preceding section and are summarized in Table 5.9 and in the following discussion.

Five church properties would be required for the project right-of-way. These are discussed in the earlier section on "Dislocation Impacts to Non-Profit Organizations."

An additional six churches would be negatively affected by visual and noise intrusion on their properties and by slightly reduced accessibility. These impacts are not serious for five of these churches but have the potential for being serious for the Shiloh Baptist Church, 1213 Scott Avenue (refer to Willard Neighborhood and Plate 12, Appendix C). During the design phase of the project, relocation of this church will be considered in consultation with the church's representatives. Three of these churches are expected to benefit from the project through improved accessibility and visibility.

The acquisition of part of a parking lot for Des Moines Technical High School will be required for the project (see Callanan Neighborhood discussion). During the design of the project, comparable parking facilities in the vicinity of the high school will be developed to replace the loss of these parking spaces (approximately 50 spaces).

The project is expected to have positive impacts on vehicle and pedestrian accessibility and pedestrian safety for several schools including: Des Moines Technical High School, Washington Elementary School and St. Anthony's Catholic School. School pedestrian crossings on Indianola Avenue in the vicinity of S.W. First Street and in the Cottage Grove Avenue area will be provided as part of the project.

#### IMPACTS TO COMMUNITY FACILITIES

##### Emergency Services

The proposed project will result in reduced response times for fire protection, police protection and ambulance services to many central city areas, as compared to existing conditions or the No Action alternative. Specific areas where improvement is anticipated include:



- Fire protection to the industrial area south of Market Street and west of S.W. Ninth Street (Plates 15 and 16, Appendix C). Access to this area from Fire Station No. 1 (Ninth and Mulberry) would be possible via the exit ramp from S.W. Ninth Street to the CBD Loop.
- Fire protection to the area south of the CNW Railroad tracks, north of Indianola Avenue and west of the CBD Loop via Dunham Street (Plate 8, Appendix C).
- Fire protection to the area north of the CNW tracks and south of the Raccoon River via the CBD Loop, E. Jackson Avenue and S.W. Second Street (Plate 8, Appendix C).
- Fire protection and police accessibility for the area immediately south of the CBD Loop from S.W. Ninth Street to S.E. 15th Street (Plates 6 through 12, Appendix C).

Adverse effects on accessibility are predicted for:

- Police and ambulance access to the area between E. 14th and E. Astor Streets and south of E. Court (Plate 11, Appendix C). Fire protection to this area would not be adversely affected.
- Response time from Fire Station No. 1 (Ninth and Mulberry) to areas along High Street immediately west of Harding Road (Plates 3 and 5, Appendix D). This applies to Alternatives 1A and 1B only (interchange alternatives). Accessibility to Iowa Methodist Medical Center from this same area would also be adversely affected by Alternatives 1A and 1B.

#### Utilities

The project will require the relocation of utilities such as water, gas, electric, telephone and sewer. Table 5.13 in the following section on "General Economic Impacts" presents cost estimates for these relocations. Residents and businesses in the area will be inconvenienced while this utility work is taking place.

A large area in the Des Moines Water Works would be affected by the project (refer to Plate 4, Appendix C and Figure 5.8). This area is projected to be the major expansion area for the plant as additional water demands are placed upon the system.

Meetings with the Water Works staff regarding this matter were held in late 1982 and early 1983 at which time they provided comments on the project. These comments indicated that Alternative B (Plate 8, Appendix D) would greatly interfere with their expansion plans for this area. There are no other areas in the Water Works property to which expansion can be shifted. It would also require the disconnection of the northern end of the existing gallery system. Without this water resource it is projected

that the availability of water to consumers in the Des Moines metropolitan area would be reduced as much as 10 million gallons per day. Alternative A (Plate 7, Appendix D), which would result in only one bridge through the area, would allow this future expansion. However, it would still conflict with an existing suction well. A movement of the alignment of Alternative A to the east would be necessary to make this alternative compatible with the operations of the Des Moines Water Works (summarized from letter of February 4, 1983, by Dr. L. D. McMullan, Director of Engineering Services, Des Moines Water Works). The Water Works staff also commented on the Draft EIS (refer to Appendix E).

During the preparation of the Final EIS, a number of interchange layouts were developed and evaluated for this area. A layout was selected, in consultation with the Water Works staff, that would minimize impacts to these facilities (refer to Plate 4, Appendix C, and Figure 3.12). Additional comments were provided by the Water Works staff during the preparation of the Final EIS. These are presented in Appendix E. Part 4. Noise impacts and water quality impacts to the Water Works area are discussed in subsequent sections of this report.

## GENERAL ECONOMIC IMPACTS

### Effects on Development

Construction of the CBD Loop Arterial will have both short- and long-term effects on development in Des Moines. Short-term effects include loss of residential, commercial and industrial property due to right-of-way acquisition. Over the long-term there will be growth in the above types of property, and property values will be enhanced. Conversely, the No Action alternative will have no immediate effect but will inhibit the potential for future growth.

The Preferred Alternative of the CBD Loop Arterial will provide improved access to industrial areas south of the Central Business District and south of Raccoon Street and along the Indianola Avenue Connection and the E. 15th Street Extension and, therefore, will have a positive effect of development of these areas.

A recent study by the Des Moines Plan and Zoning Department examined the economic benefits that would be created by this project for the area south of the downtown core, between Fleur Drive and the Des Moines River. This industrial area is now under-utilized and seen as undesirable for development because of poor access, flooding and numerous railroad crossings. The study projected that as a result of the CBD Loop, the area could be

redeveloped resulting in from 3,100 to 4,800 new jobs and \$3.9 to \$4.3 million in additional annual taxes (Des Moines Plan and Zoning, 1987).

The reduction of traffic within the Central Business District as a result of the diversion of through traffic to the proposed project, will encourage continued expansion and redevelopment of the downtown area.

#### Effects on Employment and Business

Over the long-term, employment is expected to increase due to increased commercial and industrial development that will be fostered by the project.

The construction of the proposed roadway will provide employment for the construction industry in the areas of highway construction, bridge construction, building demolition, building remodeling, sewer construction, utility relocations, traffic signals and street lighting, landscaping and erosion control, as well as other work. In addition, employment will be available in the areas of engineering, legal and administrative services and a wide variety of other support services that will be needed to accomplish this project.

The economy of the local area would be affected by the expenditure of the construction funds involved in the project. Materials would be purchased and labor would be hired from the local market. Wages paid to workers would be spent on local goods and services. When these dollars are spent, they generate additional spending as the ripple effect is felt in the economy. In addition, to direct labor expenditures, a portion of the costs of locally purchased materials and supplies goes to cover labor costs of the sellers. These dollars also circulate in the economy exhibiting the ripple effect. It has been estimated that approximately 25 cents of each dollar spent locally for materials and equipment could be considered as local income. As a hypothetical example of the ripple effect, if construction cost of the CBD Loop were \$30,000,000 (\$16,000,000 for materials and supplies and \$14,000,000 for labor cost) and all funds are expended locally, local resident income would be \$18,000,000 and local community income would be \$45,000,000.

The proposed project, although reducing through traffic in the CBD, is not expected to adversely affect retail sales in the downtown area. The through traffic that will be able to bypass the central business area is essentially made up of local motorists, as opposed to out-of-town motorists; the impact on retail sales is therefore expected to be minimal as retail sales are not dependent upon "drive-by" or "impulse" types of business.

Similarly, the proposed project is not expected to have any adverse impacts on the economic viability of the central business area of the community; all impacts are expected to be positive through the improvement of traffic conditions in the area. The downtown is expected to continue as a strong political, financial, administrative and business center. This area has experienced considerable growth in office space in recent years and is continuing to grow at present. Included within the area are governmental offices of Polk County and the city of Des Moines, numerous offices of the state of Iowa and offices of the federal government, in addition to major offices of numerous insurance companies and financial institutions.

The Preferred Alternative will displace 42 businesses (refer to earlier section on "Commercial Relocation Impacts"). Relocation of these businesses because of the project may affect employment; some employers may decide to reduce operations and employment, while others may elect to expand their businesses and hire additional employees. The development of new businesses or industries in existing vacant areas south of the CBD as the result of improved access provided by the proposed project will result in new employment opportunities. Continued development of the downtown area of Des Moines, as aided by reductions in traffic congestion, will likewise result in additional employment in offices and retail areas.

#### Effects on Tax Base and Reserve

The construction of the CBD Loop Arterial is predicted to influence the urban tax base in the following ways: 1) acquisition of rights-of-way, 2) induce changes in property values, and 3) affect property development.

When highway right-of-way is acquired, property reverts to public ownership, resulting in an initial loss of property tax base and property tax revenue. These losses are the total taxes that would otherwise be collected by Polk County and distributed to the various jurisdictions. The city of Des Moines, the Des Moines Independent School District and Polk County would experience the greatest tax losses based on their respective percentages of property taxes, according to Table 5.11.

Table 5.12 indicates the estimated property tax base and property tax revenue losses attributable to the construction of the various alternatives and includes the revenue losses per jurisdiction. The total valuation of the city of Des Moines is \$2,985,524,368.00, which includes \$2,487,130.00 in agricultural land valuation. The losses of tax base, as percentages of the total valuation, vary from 0.32 to 0.38 percent for Subalternatives 1A, 2A, 1B and 2B.



It is anticipated that many of the displaced residents, businesses and industries will move to new locations within the community, thereby tending to reduce the overall tax base loss for the community.

The construction of the project may initially result in a decrease of property values for some properties remaining adjacent to the new facility. Other properties are expected to improve in value due to the diversion of traffic from streets in their areas to the new facility. Industrial and commercial development is expected to be fostered along the new roadway where zoning permits and where access is improved by the project, thus enhancing the community's tax base.

Conversely, property values are expected to decrease for the No Action alternative in areas of increased traffic congestion. Existing industrial areas with poor accessibility are expected to undergo deterioration and restriction of future development, particularly immediately south of the CBD.

#### Effects on Public Expenditures

Anticipated public expenditures for the project will include construction costs, public utility relocation or adjustment costs, right-of-way acquisition and relocation assistance costs, engineering, legal and administrative costs, and maintenance, road-user and accident costs.

The data in Table 3.2 presents a financial comparison of the alternatives, including preliminary cost estimates for the construction of the CBD Loop Arterial and its connections to the existing street network. This data identifies various major areas of costs, i.e., grading and drainage, pavement, structures, utility adjustments and others, but excludes estimated costs of widening existing streets beyond the immediate project area. Table 3.3 provides estimated total costs for constructing various sections of the CBD Loop Arterial and its connections and, in addition, includes the estimated costs of widening existing streets within the analysis area.

#### Utility Costs

Costs associated with adjustments to public utilities (sanitary sewers and water mains) are included in Table 5.13, along with other utility adjustment costs including gas, electric and telephone utilities.

#### Road User/Accident and Maintenance Costs

Other public expenditures relative to the various alternatives, but not restricted to the construction alternatives,

include the costs associated with maintenance of roadways, both old and new. Maintenance costs include such items as crack sealing, street sweeping, minor repairs, snow removal and pavement markings. The costs incurred in maintaining a highway system are dependent on the types of roadways within the network, lengths and widths of roadways, average traffic volumes and other related factors. Maintenance costs were estimated for each alternative network based on average costs per mile in the state of Iowa. Only those streets included within the analysis area of the project corridor were considered for maintenance costs. These networks generally include only the major streets within the analysis area and exclude local residential and service streets.

Current maintenance costs for each type of roadway (provided by the Iowa Department of Transportation) were used in determining the projected maintenance cost of each alternative network. It is expected that any increase in unit maintenance costs would affect each alternative network proportionately, and no allowance has been made for future cost increases.

Table 5.14 shows the estimated maintenance costs for the various networks. Due to the addition of mileage of new roadways, maintenance costs were found to be higher on those networks which include the proposed CBD Loop Arterial and its connections to the existing street system.

It is expected that streets which carry high traffic volumes will experience maintenance costs in excess of those calculated, including such items as increased repair costs and earlier resurfacing needs. Due to the lack of statistical data on such factors, the costs shown in this section do not reflect the added cost of maintaining a heavily traveled system; it is expected that actual maintenance costs for the "No Action" alternative, in particular, will exceed the average roadway maintenance costs indicated.

The public, as road users, pays the costs of owning and operating vehicles upon roadways. These costs depend upon the type of vehicle, the number of vehicle-miles traveled, operating speed of vehicles, number of stops necessary while traveling along a section of street and the duration of such stops. The latter three items depend upon the type of roadway and its ability to accommodate traffic demands without undue amounts of traffic congestion. Generally, a transportation network that provides higher operating speeds with fewer stops and fewer delays will accommodate more traffic and will reduce road-user costs.

An analysis of road-user costs for the major streets and roadways contained within the analysis area, including the proposed CBD Loop Arterial and its various connections and street

widenings, was conducted for all the alternatives. Minor local residential and service streets were not included in this analysis. The analysis included consideration of the types and lengths of roadways, projected traffic volumes for the year 2000, running and delay costs (based on 1980 costs), and traffic operational characteristics. The results of this analysis for the various alternatives is indicated in Table 5.15.

The amount and severity of accidents that occur upon roadways is also reflected in costs to the public for injuries, fatalities and property damages. The numbers of the various types of accidents (fatality, injury and property damage) are dependent upon the type of roadway facility, traffic control measures, traffic volumes, the degree of traffic congestion and other factors. The alternatives were analyzed relative to current state-wide accident rates for the state of Iowa and on traffic volume projections for the year 2000. No statistical accident experience data is available, however, that relates to the degree of traffic congestion. The data in Table 5.16 indicates the estimated numbers of the three types of accidents for each alternative, based on vehicle-miles of travel on various roadways within the analysis area. This analysis is also based on state-wide accident rates per 100 million vehicle-miles of travel on the various types of roadways. Cost data provided is based on National Safety Council data for fatality, injury and property damage accidents.

Table 5.17 summarizes all projected annual road-user, accident and maintenance costs and presents the annual cost savings of Alternatives A, B and Preferred, as compared to the No Action alternative.

#### IMPACTS TO CITY-OWNED PROPERTY

The project will pass through the city of Des Moines' material storage yard, located west of Sec Taylor Stadium and south of S.W. Third Street (Plate 7, Appendix C). This yard includes a dispatch office, underground storage for liquid calcium chloride, storage buildings for salt spreading equipment and construction equipment, a salt dome and associated facilities. This facility would be relocated to another site and reconstructed to provide comparable services and storage as they existed at that time as part of the CBD Loop Arterial project.

The project will also require a 0.10-acre lot located at the northeast corner of Woodland Avenue and Harding Road. This city-owned lot contains the maintenance shop and office for Woodland Cemetery. It also contains an underground gasoline storage tank and a vacant house which, at times, has served as the home for the Supervisor of Woodland Cemetery. These facilities will be

replaced at another location to provide the comparable storage and services as part of the CBD Loop Arterial project.

#### IMPACTS TO PARKS AND RECREATION AREAS

Each of the alternatives considered, except for No Action, would affect parks and open space lands. A map of parks and open spaces in Des Moines appears in Figure 4.3. Figure 4.4 provides more detail concerning these areas that are in the project corridor.

Small amounts of land would be required from several of these parks for the project right-of-way. An attached Section 4(f) Statement discusses the impacts to these parks. The following paragraphs and Table 5.18 summarize these impacts.

#### Description of Sections 4(f) and 6(f) Involvement

The Preferred Alternative will require land from two publically owned parks, Sam Cohen Park and Riverside Park. Land will also be required from four open spaces which are part of the city-owned River Front Development Project and from an open space area in the Des Moines Water Works. Impacts to each of these parks are discussed in more detail in the attached Section 4(f) Statement. Also, the reader is referred to the later sections on "Noise Impacts" and "Aesthetic Impacts" for a discussion of these impacts to parks.

#### Sam Cohen Park

Sam Cohen Park is a one-acre park located on Scott Street between S.E. 10th and S.E. 11th Streets in a residential area. The park is owned by the city of Des Moines and controlled by the Des Moines Park and Recreation Board. It was conceived as a minipark to improve the recreation facilities for senior citizens. The focal point of the park is a structure in the west end which has been placed on the National Register of Historic Places, the Old Southeast Water Trough. Other facilities at the park are benches around the water trough and a memorial planter. No off-street parking is provided.

Alternatives A, B and the Preferred Alternative will require the acquisition of approximately 0.3 acre of land from the northeast corner of the park (Plate 10, Appendix C). This area is on the opposite end from the main use area of the park. Increased noise levels and visual intrusion will result from the project.

During the preliminary location study for the project, several alignments were considered and eliminated because of



safety features or cost. These are described in the Section 4(f) Statement. The Des Moines Park and Recreation Board has requested the relocation of this park because of the severity of these impacts. This relocation will be an eligible project cost.

### Riverside Park

Riverside Park is a 16.3-acre park located south of Elm Street between S.W. First and Second Streets. It is owned by the city of Des Moines and controlled by the Des Moines Park Board.

The land in the northern half of the park was the site of the earliest settlement in the city, being occupied in the early 1840s by Fort Des Moines No. 2 and subsequently by the original town of Fort Des Moines. A log cabin stands in this area to commemorate the founding of the city.

The only recreation facility in Riverside Park is the Sec Taylor Stadium, located in the southeastern portion of the park. The stadium is used by many other groups, including government, civic organizations and charities. Examples of functions recently held there include charity softball games, rock concerts, dog shows and church services.

Alternatives A, B and the Preferred Alternative will require the acquisition of approximately 0.8 acre of land from the northeast area of the park (Plate 7, Appendix C). This will result in the roadway being closer to the log cabin (70 feet) than it currently is (120 feet). It will also result in the loss of some parking spaces in the Sec Taylor parking lot and changes in vehicular and pedestrian access.

A landscaped buffer along the roadway and adjacent to the log cabin will be provided as part of the project and designed to be compatible with the park environment. The design of the project adjacent to Sec Taylor Stadium will be coordinated with the Park Board to maintain adequate access. The project will maintain the S.W. First Street access, provide an access from the west along S.W. Second Street and connect with River Drive. Thus, the project will greatly improve accessibility to stadium events from the eastern, western and southern areas of the city. A pedestrian crossing to the parking areas west of S.W. Third Street will also be provided.

All alternative alignments that were examined that would meet the traffic needs would have required passing through some portion of Riverside Park. Any alternatives that would avoid the park would have to be located to the north within the downtown area or to the south of the Raccoon and Des Moines Rivers. An alignment through the downtown area would have been incompatible with the future land-use planning goals and the goals of this

project. An alignment to the south of the Raccoon River and Des Moines River would have been too far removed from the CBD project area to be effective in reducing through traffic in the CBD.

### River Front Open Space Development Areas

The proposed project will require the acquisition of several small tracts of land that are part of the River Front Open Space Development Areas owned by the city and maintained as open spaces by the Park Department. These areas may be seen in Appendix C on Plate 7 (West River Front Park) and Plates 8, 9, 12 (Riverfront Acquisition Areas). The city of Des Moines has owned much of the river front land in the city along the Des Moines and Raccoon Rivers since the early 1900s. In 1975 the city proposed to acquire the additional land needed to complete the river front corridor and to develop the corridor as an open space and recreation area. Facilities are to include a 22-mile bike trail system, a 4.5-mile river drive and a 6.6-mile pedestrian trail. When completed, the park will encompass all of the river's length within the city limits.

In 1975 the city requested federal funding for this project from the Land and Water Conservation Fund. A Final Environmental Impact Statement for the project was distributed by the Department of Interior in 1977. In this statement the boundaries of the project reflected the land needed for the CBD Loop transportation route (referred to at that time as "South Loop Expressway"). It was stated that access for the bike path and hiking trail would be provided across the expressway either below the bridge or with an overpass (p. 4, Riverfront Acquisition Study, Department of Interior, 1977). To date, land acquisition for the project has been completed; and a bike path has been constructed on the east side of the river. Federal funds (U.S. Department of Interior Federal Grant No.: (HCRS) N.P.S. #19-00581.4 (Iowa)) were used for bike path construction. However, no federal funding was used to acquire the properties in the CBD Loop Arterial project corridor.

Alternative A, B and the Preferred Alternative will require the acquisition of 2,000 square feet from the River Front Development area along the west bank of the Des Moines River in the vicinity of Elm Street (Plate 7, Appendix C), 0.75 acre on the east bank of the Des Moines River in the vicinity of Raccoon Street (Plate 8, Appendix C), and 0.3 acre on the south bank of the Raccoon River in the vicinity of Jackson Avenue (Plate 7, Appendix C) and 0.13 acre on the north bank of the Raccoon River (Plate 7, Appendix C).

The project will cross the bike path along the east side of the Des Moines River. This path will be relocated underneath the proposed roadway as part of the project, refer to Section 4(f)

Statement, Figure 2. This relocation is considered a Section 6(f) involvement and will require conversion approval by the U.S. Department of Interior and the Iowa State Liaison Officer. The project will also cross areas where future bike paths are proposed. All project bridges will be designed to accommodate these pathways underneath them. Landscaped buffer areas will be provided adjacent to these areas.

All alternatives examined would cross the River Front Development project, as this borders the Raccoon and Des Moines Rivers throughout the downtown area.

### Des Moines Water Works

This property is owned by the board of the Des Moines Water Works. Its primary function is as water collection, water storage and water treatment facilities for the city's water supply. Most of the Water Works' property south of the treatment facilities (Plate 4, Appendix C and Figure 5.8) is used for park and recreation activities. The area to the north of the treatment facilities where the proposed project is located has no discreet recreation areas. No formal or organized recreation occurs there, although some passive use, such as bird watching and fishing from the banks of the Raccoon River and jogging, is occasional.

An important recreation feature south of the treatment facility is a large crabapple arboretum which attracts thousands of people during the spring blooming season. Other facilities located here include pedestrian and bike trails, picnic areas and a fountain and formal garden area. Fishing also occurs from the banks of the Raccoon River.

The area north of the treatment facility (Figure 5.8) contains water intake lines, the North Gallery System, and maintenance access roads for the property's facilities. The long-range plans also call for the area north of the treatment facility and west of the proposed project to be the major expansion area for the water treatment and other related facilities. It is also possible that a bike or hiking trail may be developed along the Raccoon River. If it is developed, such a trail could easily pass under the highway bridges planned for this area.

The Preferred Alternative would require approximately 12.5 acres in this area; Alternative A would require seven acres; and Alternative B would impact 17 acres. The project will introduce noise levels into this area that are predicted to be higher than the existing levels or those for the No Action alternative. A landscaped buffer area will be provided adjacent to the project in this area. Noise abatement measures are not feasible and practical (see noise analysis section).

Although the Des Moines Water Works is commonly referred to as a park, it serves as a multiple-use area for the city's municipal water facilities with the public using portions of it for recreation purposes. Based on its use as described above, FHWA has determined that Section 4(f) does not apply to the portion of the property used by the proposed project. However, even if Section 4(f) would apply, there are not feasible and prudent alternatives to using land from the property and all possible planning to minimize harm has been incorporated into the proposed project.

## Other Impacts to Park and Recreation Areas

Allen Park, located south of Raccoon Street, would be adjacent to the CBD Loop alignment (Plate 10, Appendix C). It contains a variety of playground equipment. The project is not expected to have visual or noise intrusions on this park. The project will improve accessibility to the park by vehicle from areas outside the neighborhood.

The project will improve pedestrian access to Columbus Park (Plate 8, Appendix C). There are currently high levels of traffic on S.E. First Street bordering the western edge of the park. Much of this traffic will be diverted to the CBD Loop.

Alternatives 1A and 1B would impact Chamberlain Park, located at 19th Street and Ingersoll Avenue. These alternatives would require about 50 square feet of land from the park and increase noise levels.

Woodland Cemetery is maintained by the Park Department as a public open space. The CBD Loop would result in increased noise levels in the eastern edge of the cemetery. However, the No Action alternative would have similar noise levels. Landscaping along the highway right-of-way that will enhance the open space environment will be provided as part of the project. The project will also require the moving of the entrance to the cemetery approximately 50 feet to the west. This will improve vehicular access and safety features at the Woodland Avenue intersection with the project. This gate will be reconstructed and landscaped appropriately. A house that is sometimes used as the caretaker's home for Woodland Cemetery and Glendale Cemetery is owned by the city and is located along Harding Road. This property also contains a maintenance shed and underground gasoline storage tank. It will be required for the project right-of-way and will be replaced as part of the project.

The project will cross the only access to a city open space, Frank Depuydt, located to the east of the Water Works area. To ensure continued access to this property, the new Raccoon River bridge at this location will be sized to allow vehicles to pass underneath.

Hawthorn Park is a 15.5-acre neighborhood park in the southeast corner of the project corridor (Plate 12, Appendix C). The Preferred Alternative would pass adjacent to this park but would not require any right-of-way from the park. Noise levels in the park would be higher than currently exist as a result of the project. Vehicular and pedestrian access to the park from the east side will be affected by the project. Railroad Avenue and Harriett Street, which now provide access from the east, would be closed at the project. However, eastern access will be available



one or two blocks to the north at Maury Street. Also, most of the residential area that the park serves is to the north and west, and access from these areas will not be affected by the project. A landscaped buffer area will be provided in the project right-of-way. Noise abatement measures were evaluated and found not cost-effective. Also, the area affected is not heavily used. As part of the project, a pedestrian/bike underpass will be provided at the southern end of the project.

#### IMPACTS TO PEDESTRIANS AND BICYCLISTS

The proposed project does not conflict with any plans for future development of the city's pedestrian or bicycle facilities and does not eliminate or sever any existing bike paths. A portion of the existing River Front Bikeway on the east side of the Des Moines River will be relocated to pass under the proposed arterial. There are several proposed bikeways that the project alignment would cross: on the west side of the Des Moines River; on the north bank of the Raccoon River in the vicinity of Riverside Park; on the south bank of the river in this area; and in the Water Works area. Figure 4.5 shows existing and proposed bike trails in the project area. The project bridges will be designed to allow these future bikeways to pass beneath them.

By reducing traffic volumes and congestion on many existing city streets, the construction of this project will provide increased safety for pedestrian and bicycle travel throughout the project area. However, the closure of some existing streets as part of the project may result in increased travel distances for some pedestrian and bicycle trips.

The sidewalk on the bridge crossing the CBD Loop Arterial at Grand Avenue will be designed as part of this project. Pedestrian and bicycle access to the Water Works area and the Gray's Lake area south of the Raccoon River are planned for the existing Fleur Drive bridge over the Raccoon River, with pathways being provided from the southerly end of the bridge, joining to the existing pathway that passes under the bridges.

#### IMPACTS TO LAND-USE PLANNING

Existing and proposed land use is discussed in Section 4, "Affected Environment," and illustrated in Figures 4.6, 4.7 and 4.8. Impacts of the project to existing and proposed land use along the various segments of the alignment are described in the preceding discussion of each affected neighborhood under "Neighborhood Impacts" in this section.

Land-use policies for the city of Des Moines are presented in Appendix B.1. The proposed CBD Loop Arterial is consistent with the land-use goals and objectives of the city, and the corridor for the project has been incorporated into future land-use planning for a number of years. Potential impacts of the project, such as land-use changes or accelerated development in areas where accessibility is improved are among the objectives of the land-use plan. These effects on land use are anticipated to be positive ones on existing and proposed land use, especially in the CBD area.

In anticipation of the CBD Loop, the city has attempted to maintain compatible land use within the project corridor during recent years. Because of the long history of planning for the project and its incorporation into future land-use planning of the area, secondary impacts relative to land use are expected to be minor.

Certain sections along the alignment offer the opportunity for joint development activities. Public acquisition of some of these areas will be considered. These areas are described in the subsequent section on aesthetic impacts (also see Figure 5.9).

#### IMPACTS TO ARCHITECTURAL AND HISTORIC RESOURCES

In accordance with the federal requirements regarding the identification and protection of potentially significant architectural and historic resources, a comprehensive property-by-property survey was undertaken after the right-of-way requirements for the project were established. The purpose of this survey was to identify any properties located within the potential impact zone of the project which may be eligible for the National Register of Historic Places. The area surveyed was a corridor which followed the proposed arterial alignments. The results of this survey are presented in Appendix Volume I to the Draft EIS, "Cultural Resources of the CBD Loop Arterial, History and Architecture."

Two buildings that occur within the project right-of-way of the Preferred Alternative were judged to be eligible for the National Register of Historic Places by the State Historic Preservation Officer (SHPO). This alternative would also pass through the edge of the Sherman Hill Historic District and require the entrance to Woodland Cemetery to be moved. Both of these latter properties are on the National Register of Historic Places.

Twenty-three contributing structures located in or adjacent to the Sherman Hill Historic District would also be within the

project right-of-way. These are ones that individually do not qualify for the National Register of Historic Places but contribute to the significance of the district.

Separate Draft and Final Section 4(f) Statements for this project have been prepared and present detailed discussions of these properties, project impacts, measures to minimize harm and avoidance alternatives. The following paragraphs provide a brief summary of this Section 4(f) involvement.

National Register Eligible Properties  
Within the Proposed Right-of-Way

Capital City Woolen Mills - 113 S.W. Eighth Street (5.13)

This complex is identified by number (5.13) on Plate 6, Appendix C. It originally housed the Capital City Woolen Mills. There are five distinct sections to the complex, ranging in age from 1877 to 1970. Part one of the complex was a livery or Wells-Fargo station, according to the present occupants. Part two housed the Capital City Woolen Mills which went into operation in 1882. Parts three and four were additions to the mill in 1914. Part five was constructed in 1970.

This mill is historically significant for its role in both Jewish immigration to Des Moines and as a major industry in the city. The mill was owned by Abraham and Leopold Sheuerman who were both leaders in the Jewish community. They often aided newly arrived immigrants by giving them jobs at the woolen mill during the period of rapid Jewish settlement of the city (1882-1895). The oldest parts of the building are considered to have some architectural significance as well, although the later additions (in 1914 and 1970) detract from the building's integrity.

Clifton Heights United Presbyterian Church - 1218 Indianola Avenue (7.14)

This church, built in 1923, is a highly distinctive example of church architecture of the 1920s (refer to No. 7.14 on Plate 8, Appendix C). It is the third church the congregation built. It is the primary reminder of settlement in the area that dates to at least 1879, the year the congregation first organized as the Presbyterian Church of South Des Moines. Settlement in this area was greatly accelerated in 1887 when the Clifton Heights Land Company bought and began developing large tracts in the area. The presence of a Presbyterian Church indicates that the area has not always been an exclusively Italian enclave.

Sherman Hill Historic District - Between Woodland Avenue, School Street, 15th and 19th Streets

The project alignment would pass through approximately 650 feet of the northwestern edge of this district (Plate 2, Appendix C). This district is one of Des Moines' oldest residential suburbs and today contains the city's highest concentration of late 19th and early 20th Century residential architecture. The district and three of its residences are listed on the National Register of Historic Places, and a number of others have been identified as contributing structures. This same area has also recently been declared a local historic district, with similar boundaries, except between Center Street and Woodland Avenue where the local designation extends westward to 20th Street.

The Preferred Alternative would also displace 23 structures within or adjacent to this historic district which were found to be eligible for the National Register of Historic Places as contributing structures. These structures are considered to be significant because of the contribution they make to the character of the Sherman Hill Historic District. They include 18 single-family dwellings, three apartment buildings and two commercial structures. Six of these are located within the historic district boundaries, while the remainder are immediately adjacent to the district. These structures are described in more detail in the Section 4(f) Statement.

Woodland Cemetery - West of Harding Road Between Olive Street and Woodland Avenue (1.25)

Woodland Cemetery was designed in 1864 by Civil Engineer J. B. Bausman to be a rural, romantic cemetery. Its design reflects principles of romantic cemetery design: lush greenery; uneven, rolling topography; a variety of elaborate monuments; and narrow, curving lanes. Some of the city's most influential and historically significant residents are interred at Woodland. This cemetery was designated a local landmark in late 1985 by the City Council of Des Moines.

The proposed project would be located to the east of this cemetery within the existing Harding Road right-of-way. To improve safety at the intersection of the project and Woodland Avenue, the entrance to the cemetery would be relocated to the west (Plate 3, Appendix C).

National Register Listed or Eligible Properties  
in the CBD Loop Project Area

There are 11 properties within the general project area that are on the National Register of Historic Places or have been identified by the Iowa State Historic Preservation Officer (SHPO)



as being eligible for the National Register. The Preferred Alternative would pass adjacent to six of these. These include: four commercial structures, one residential structure and a water trough. The project will not have significant impacts on any of these properties, except the water trough. It will result in the relocation of this structure.

#### Measures to Minimize Harm

A Memorandum of Agreement that specifies mitigative measures for the properties impacted by the Preferred Alternative has been developed by FHWA in consultation with the State Historic Preservation Officer (in Appendix B of attached Section 4(f) Statement).

#### Alternative Alignments Considered

Alternatives A and B would have greater impact to historic and architectural resources than would the Preferred Alternative. The north-south segment of these alternatives would require the acquisition of one to two structures that are considered to have potential eligibility for nomination to the National Register of Historic Places (Sites 2A.2 and 3.9). The Preferred Alternative would require no such sites in this segment (Table 5.19). This segment also contains the structures that contribute to the significance of the Sherman Hill Historic District. Alternatives 1A and 1B would displace 31 of these, Alternatives 2A and 2B would displace 27, while the Preferred Alternative would displace 23.

All alternatives considered for the east-west segment would require the taking of two structures considered to have potential for nomination to the National Register of Historic Places (Sites 5.13 and 7.14). In addition, Alternatives 1A and 2A would have required the acquisition of another National Register eligible site, Site 2A.18.

All alternatives would have passed through the northwest edge of the Sherman Hill Historic District and required the relocation of the Woodland Cemetery entrance. The Preferred Alternative would be located further from the Sherman Hill Historic District than would the other alternatives in the area between Center Street and Woodland Avenue. However, it would be located closer to Woodland Cemetery.

Specific avoidance alternatives that were examined relative to these properties are described in the Section 4(f) Statement.

#### IMPACTS TO ARCHAEOLOGICAL RESOURCES

A Phase I Cultural Resources Survey was conducted in 1982, and the report of this survey was an Appendix volume to the Draft

EIS. The results of this study indicated the need for further investigations. A Phase II study was conducted in 1985 which revealed that there was an archaeological site, Site 13PK61, in the project area that was eligible for the National Register of Historic Places. This site was determined eligible by the Keeper of the National Register in a notification dated April 9, 1986 (in Appendix E, Part 4). This site is discussed in the following section and in more detail in the Section 4(f) Statement.

#### Site 13PK61

This site contains buried remains of Fort Des Moines No. 2 (1843-1846), an old city dump, early buildings in the city of Des Moines (1846 and after), and prehistoric Indian artifacts. It is located in the vicinity of Riverside Park between S.W. Seventh Street and the Des Moines River and between Walnut Street and the Raccoon River (Plate 7, Appendix C).

Subsurface investigations were conducted in this area in the Phase I study to determine if the original land surface on which the Fort and early Des Moines had stood still remained beneath the fill that had been deposited there over the years. The upper layer (A horizon) of the original soil surface was found to be present, occurring at varying depths from 50 cm (1.7 feet) to 2 meters (6.6 feet) below the existing ground surface. On the basis of this finding, it was concluded that there was a good possibility for building foundations, floors and other remains of the Fort to still be preserved beneath the fill. The Phase II study uncovered the remains of a hearth that occurred at the predicted location of one of the Fort buildings. Although it was not conclusively linked with the Fort, this structure was dated to pre-1851, strongly suggesting that it was part of a Fort building. Other buried historic materials were uncovered during the study, indicating the potential for intact historic deposits to occur throughout this area.

During the Phase I study of the Fort Des Moines area, an old city dump was discovered buried beneath about 6 feet of fill material. Historical records research and remote sensing work conducted during the Phase II study indicated that the size of the old dump could be quite extensive, extending perhaps between S.W. First and S.W. Third Streets and between Elm Street and the Raccoon River. Artifacts from the Riverside Park portion of the dump dated primarily to the 1910s to 1920s. However, because of its location adjacent to the Fort area, it is thought that parts of the dump could harbor artifacts dating to the 1840s and have cultural significance.

Phase II test units that were dug in the area north of Elm Street between S.W. Third and S.W. Second Streets uncovered prehistoric materials associated with the Oneota period (A.D. 1000 to historic times).

### Project Impacts

The Preferred Alternative would pass to the south of the predicted locations of the old Fort buildings. The project would lie approximately 300 feet to the south of the hearth structure that was found and from 10 to 350 feet south of the area predicted to be the location of a row of barracks (Raccoon Row). However, railroad relocation associated with this project would occur along this Raccoon Row location.

The proposed alignment would pass over the old dump site. Both the S.W. Second Street and S.W. Third Street extensions of the project could cross the dump from near Elm Street to the Raccoon River. It is estimated that the project would be overlying approximately eight percent of this dump. As the top of the dump was found to be buried beneath 6 feet of overburden in the vicinity of S.W. Second Street, it is anticipated that the construction of this roadway will not infringe upon the dump. (Roadway construction is anticipated to be no deeper than two feet; associated storm sewers may go four to six feet deep.) In the vicinity of S.W. Third Street, however, remote sensing data indicated an overburden layer of from 3 to 4 feet deep. As no test trenches were dug in this area, the existence of the dump below this overburden has not been verified. If it does occur here, storm sewer construction would be deep enough to infringe upon the dump.

There is potential for prehistoric material to occur beneath the project alignment between S.W. Seventh Street and S.W. First Street. This material would occur in the buried A horizon, which was found to occur from 1.7 to over 5 feet below the existing ground surface. Roadway and storm sewer construction could infringe upon this original soil surface at many locations in this area.

### Measures to Minimize Harm

In accordance with 36 CFR Part 800, a Memorandum of Agreement that specifies mitigative measures for the impacted cultural resources has been developed by FHWA in consultation with the SHPO. It appears in Appendix B of attached Section 4(f) Statement.

### Alternative Alignments Considered

Alternatives A and B would pass through this same area. Any alternatives that would avoid this area would have to be located

to the north within the CBD area or to the south of the Raccoon River. Two alternatives were examined that would pass through the CBD area. They were found to be incompatible with the future land-use planning goals and the goals of this project. These goals are to reduce traffic in the CBD area and provide a pedestrian-oriented area. Both of these alternatives would result in increased traffic congestion in the CBD and would not improve accessibility to the downtown industrial area. An alignment to the south of the Raccoon River was considered but was dropped because it would have been too far removed from the project area to be effective in reducing traffic in the CBD and would not serve the downtown industrial area.

Only one alignment was originally considered for this area and described in the Draft EIS. As a result of the Phase II study, however, the city of Des Moines directed that this alternative be dropped and a new one be developed that was further removed from the predicted location of the Fort buildings. The original alternative was located from 10 to 70 feet to the north of the preferred alternative and would have been closer to the predicted locations of the Raccoon Row barracks (Plate 13, Appendix D).

## NOISE IMPACTS

The guidelines presented in the Federal Highway Administration's Federal Aid Highway Program Manual, Volume 7, Chapter 7, Section 3 - Procedures for Abatement of Highway Traffic Noise and Construction Noise, were used during the preparation of this traffic noise analysis as required for location approval of federal aid highways. Reference to these guidelines and the publication Fundamentals and Abatement of Highway Traffic Noise (Bolt, Beranek and Newman, 1973) is recommended if further detail is desired.

### Highway Noise Fundamentals

In order for the reader to have a better understanding of this noise study, a brief overview of several aspects of noise are presented in the following paragraphs.

"Decibels" are used to measure the intensity of sound just as "degrees" and "meters" are used to measure temperature and length. Decibels, abbreviated dB, are a logarithmic reference to sound pressure with the reference base (0 dB) being the weakest sound that can be heard by the average young ear.

The range of normal hearing is from a low frequency of 20 Hertz (cycles per second) to a high frequency of approximately 15,000 Hertz. The human ear is particularly insensitive to very low frequencies, and the "A-scale" weighting network incorporated



into the sound level meter closely approximates the frequency response of a young human ear. All noise measurements were conducted using the A-scale weighting network.

The engine, exhaust, tire-roadway interaction, brakes, vehicle vibration and air disturbance are all sources of vehicle noise. The contribution of each source to the total amount of noise is dependent on many variables such as speed, vehicle volume, auto-truck mix, and roadway geometrics. The effects of the vehicle noise source depends on the strength of this source, the amount of background noise present and the nature of the land use where the noise is heard. Figure 5.3 shows the decibel levels of several common interior and exterior noise sources, while Table 5.20 lists the noise abatement criteria and their related activities.

Vehicle noise levels are dependent on many variables. Research conducted by the Highway Research Board has resulted in a method by which the noise level produced by a future highway can be predicted. Comparison of this predicted noise level and existing measured noise levels may indicate the amount of noise impact to be experienced by nearby sensitive receivers.

There are two primary methods to control highway related noise. The first is to control the noise source by using improved muffler systems and tires that produce less roadway interaction noise. The second method is the incorporation of noise control measures into the roadway project. Typical noise control measures include raised or depressed roadway grade, changing the horizontal alignment, or constructing a barrier between the roadway and the sensitive receivers.

#### Sensitive Site Analysis

All construction alternatives border along or pass through existing land uses which can be classified as sensitive to highway related noise. The north-south segment borders along the Sherman Hill Historic District and Woodland Cemetery. This segment also contains another roadway penetrating Water Works Park.

Subalternatives 1A and 1B include roadways adjacent to Chamberlain Park. Alternative A crosses a commercial district, while Alternatives B and Preferred Alternative involve additional roadways in the Des Moines Water Works property.

The east-west segment common to all alternatives crosses an industrial area between S.W. 15th Street and S.W. Second Street, several parks and a residential area. These parks and residential areas are sensitive receiver areas, while the industrial area with its large amount of railroad activity is not considered particularly noise sensitive.

The Indianola Avenue connection borders on another residential area, passes through or beside several parks, all of which are considered noise sensitive. Two residential areas are penetrated by the E. 15th Street Extension while a portion of the roadway overpasses the railroad areas.

Forty-nine individual noise surveys were conducted to determine the existing noise levels for all sensitive sites in the project area. These included residential areas, churches, parks and schools. Refer to Table 5.21 for the number of residences represented at each site.

Existing noise levels were measured at various times of the day using a Bruel and Kjaer Sound Level Meter Type 2205. The Leq was determined by the "Check Off" method, as described in the Federal Highway Administration Report No. FHWA-DP-45-1R, Sound Procedures for Measuring Highway Noise: Final Report. The peak hour Leq, Leq(h), was determined by adding a factor to the Leq based on the time of the measurements.

Future noise predictions for the various alternatives (Figures 1.1 and 3.1 through 3.4) were made using the STAMINA/OPTIMA computer program (FHWA-Version 3, March, 1983).

#### Evaluation of Noise Impacts and Abatement Measures

Results of this analysis are shown in Table 5.21, along with the impact ratings. The ratings take into account both the existing noise level and the predicted noise level increase. A moderate or serious rating indicates the need for noise abatement considerations. Evaluation of noise abatement measures appears in Table 5.22. Table 5.21 lists the reasons noise abatement measures are not recommended for certain sites.

Noise Sample Sites 1-12 and 32-36: These sites and the Sherman Hill Historic District are affected mainly by the north-south segment. Most site locations would not have a significant change in noise levels (3 decibels or more) under any of the alternatives.

Woodland Cemetery, Site 6, would experience a 3-decibel noise level increase under the Preferred Alternative. Site 7, Tech High School Track, would have a 4-decibel decrease in noise under either Alternative 2A or Alternative 2B. Because of the interchange ramps, a 3- or 4-decibel increase would occur in Chamberlain Park, Site 8, under either Alternative 1A or 1B. Site 9, a commercial area, would experience a 5-decibel noise increase, while Site 10, Des Moines Tech High School, would experience a 5-decibel decrease under any one of the construction alternatives.

Sites 11 and 12, in Water Works Park, would experience a 6- or 5-decibel increase, respectively, under Alternatives 1A, 1B, 2A or 2B. The Preferred Alternative would increase these noise levels by 8 or 7 decibels, respectively.

The residential areas represented by Sites 32 and 33 would experience a 3-decibel increase under any of the construction alternatives. Site 35, the residential area along the east side of 20th Street, would experience a 4-decibel increase in noise under the Preferred Alternative. The residences near the intersection of 19th and High Streets, Site 36, would experience a 4- or 5-decibel increase under Alternative 1A or 1B, respectively.

Under the Preferred Alternative, serious noise impacts would occur at Sites 7, 11, 32, 33 and 35. The remainder of the sites, with the exception of Sites 3 and 36, would experience moderate noise impacts.

A berm or wall between the CBD Loop and the Sherman Hill Historic District-Woodland-Willkie Neighborhood would be effective in reducing the noise by 5 to 8 decibels (refer to Table 5.22). It would also serve as a visual barrier and mitigate the negative aesthetic impacts of the roadway on the neighborhood and historic district. Either a wall or berm will be provided as part of this project.

A master plan study was recently completed by the Sherman Hill Association which recommends a landscaped berm to serve as a buffer along the east side of Harding Road. During the design of the CBD Loop, consultation with the Woodland-Willkie Neighborhood and the Sherman Hill Association, Inc., will occur to arrive at a design that is compatible with the aesthetics of the area (refer to discussion under "Callanan Neighborhood" earlier in this section for more details).

Kingsway Cathedral, Site No. 2, is located at an intersection of two major streets. There is no practical method to reduce the noise impact other than adding sound insulation to the existing structure. This noise impact would be produced mainly by the new northbound lanes of the project. Since the predicted noise level for the No Action alternative is comparable to that created by any build alternative, any sound attenuation measures taken would improve the noise environment.

The Des Moines Water Works would be the most severely impacted area in the project corridor. While the existing noise levels along Fleur Drive will exceed 67 dBA at some locations, the noise source is limited to a single roadway. All construction alternatives introduce new roadways into the area, with Alternative B and the Preferred Alternative introducing the

greatest amount. While the total number of vehicles passing through the park would be approximately the same for all alternatives, including the No Action alternative, the introduction of new roadways would create a relatively noisier environment over a larger area than now exists. Noise barriers in this area would be very costly, while benefitting a small number of people. Most of the open space usage is located south of the project area. Therefore, barriers are not being considered for the Water Works area.

The area of Water Works Park west of Fleur Drive with its trees and the Raccoon River serves as a buffer to the surrounding urban areas. All construction alternatives of the CBD Loop project would cross this area.

Noise Sample Sites 13-16, 19 and 37: These sites are industrial park and open space areas along the Raccoon and Des Moines Rivers. Site Nos. 13 and 19 have low existing noise levels. All construction alternatives would produce the same noise levels.

Sites 13 and 37 would not experience a significant change in noise levels. Site 14, near First Avenue, would experience a 3-decibel increase, while Sites 15, 16 and 19 would experience noise increases of 17 to 22 decibels. These four sites would all experience serious noise impacts. Mitigation is not recommended for these sites because they are not residential areas.

Noise Sample Sites 17, 18, 38 and 39: These four sites represent the area between Indianola Avenue and the Raccoon River. Site No. 17 (St. Anthony's Church) would not experience a significant noise level increase. Sites 18 and 39 would experience increases of 4 decibels, while Site 38 would increase 8 decibels. Moderate noise impacts would be experienced by Sites 17, 18 and 38. Noise barriers could only reduce the noise levels by 3 to 6 decibels at only four homes. Therefore, barriers are not recommended for this area.

Noise Sample Sites 20-25, 31 and 40-45: These sites encompass the area south of the proposed east-west segment and east of the Des Moines River. An industrial area lies to the north of the proposed roadway and is not considered very sensitive to noise. However, the residential area to the south would be impacted by this project. The present major noise sources are U.S. Highway 65-69 (S.E. 14th Street), Scott Avenue, Maury Street, S.E. Sixth Street, and the railroad. Construction of the east-west segment would add a major new noise source to this area. Sites 45 and 31 would not change significantly in noise levels. All other sites in this area would increase from 3 to 10 decibels under any of the construction alternatives. Sites 21 and 24, city parks, would receive serious noise impacts. Other sites would be moderately impacted by noise.



The parks in this area are located next to existing roads which are the major noise sources. These roadways and the proposed roadway would need to be screened to produce a noise environment below 67 dBA at peak traffic times. Cohen Park, which is located next to a railroad track line, and Allen Park, which is bordered by two major roadways, would need to be almost totally enclosed by noise walls to reduce the noise levels significantly. No mitigation measures are recommended for these two parks because of their aesthetic impact and limited effect. Also, Allen Park is proposed to be reclassified by the city to nonpark uses.

Hawthorn Park, the largest of these three parks, could accommodate a noise wall of ten feet along U.S. Highway 65-69 without being a detriment to park use. However, a portion of the park would be needed for the construction of the noise wall or berm. The majority of park use is located at a considerable distance from this roadway. Therefore, noise mitigation measures are not being considered for this site.

Noise Sample Sites 28-30 and 46: These sites would be located in the vicinity of the proposed E. 15th Street Extension. Several homes and churches, represented by Sites 28 and 29, would be displaced by any of the construction alternatives. The construction of the connection for U.S. Highway 65-69 would bring the traffic closer to the remaining sites, increasing the noise levels by 4 to 6 decibels.

These homes, represented by Sites 30 and 46, would be moderately or seriously impacted by the noise levels. Noise barriers in this area would not be effective because of the elevated roadways.

Noise Sample Sites 26, 27 and 47-49: This residential area is located at the north end of the proposed E. 15th Street Extension. The proposed roadway in this area will relocate the traffic load through the residential area instead of beside it. The Vine Street Gospel Chapel (Site 26) would experience a 6-decibel noise increase under any construction alternative. Site 27 in the residential neighborhood is predicted to have a higher noise level by 4 decibels if no construction alternative is implemented. These two sites would be moderately impacted. Sites 47-49, residential areas, would experience a serious noise impact. Noise barriers would not be effective in this area.

#### Noise Contours

The year 2000 Leq 67 dBA noise contour distances were predicted for all new roadways. The generalized 67 dBA contour

lines are shown, in Plates 2 to 12 (Appendix C) and Plates 1 to 12 (Appendix D).

It should be pointed out that the distances are generalized and do not include the shielding effects of elevated or depressed roadway conditions or the shielding effect of intervening buildings. This shielding, along with any noise wall construction, would result in a contour line nearer the road.

#### Construction Noise

Those areas which were identified as sensitive to traffic noise may also be subjected to high noise levels during roadway construction. Construction with the large machinery is a strong noise source. Every effort will be required of the Contractor to supply and maintain equipment with muffler systems recommended by the equipment manufacturer.

#### AIR QUALITY IMPACTS

##### Existing Air Quality

Carbon monoxide levels have been monitored in Des Moines at 19th Street and Grand Avenue since 1979. Results show that there have been no violations of the one-hour standard of 35 ppm. Maximum one-hour concentrations have ranged from 21.6 ppm in 1981 to 8.3 ppm in 1983. The eight-hour standard of 9 ppm has been exceeded five times since 1979, the last one occurring in 1982. Maximum eight-hour levels have ranged from 10.9 ppm in 1981 to 4.3 ppm in 1984. The arithmetic mean has shown a decline in carbon monoxide levels, from 1.9 ppm in 1979 to 0.8 ppm in 1985. Most of the city of Des Moines and all of the project corridor is classified as a nonattainment area for the primary and secondary standards of carbon monoxide. The state has recently requested that the area of nonattainment be reduced to the central business district.

Suspended particulates are currently being monitored at four locations within the city of Des Moines: Fire Station No. 8 at 1249 McKinley, Fire Station No. 1 at Ninth and Mulberry, S.E. 18th Street and Scott Avenue, and at 3714 Merle Hay Road. Results indicate that there has been an improvement in air quality near Fire Station No. 1 and No. 8. In 1986, these areas did not exceed the secondary TSP standard of 150 micrograms per cubic meter. They have not exceeded the primary standard (260) since 1978. Fire Station No. 8 has a geometric mean concentration of 42 micrograms per cubic meter, while Station No. 1 has a geometric mean of 52. The area near Merle Hay Road has not changed significantly since 1979. Suspended particulate levels have remained around 60 micrograms per cubic meter (geometric mean)

and the secondary standard has been exceeded an average of once per year. The primary standard has not been exceeded in this area.

The area near the monitor at S.E. 18th Street and Scott Avenue had exceeded the secondary and primary particulate standards 14 and 3 times, respectively, in 1986. The geometric mean in 1986 was 111 micrograms per cubic meter. Monitoring at this site was discontinued in November, 1986. The area bounded by E. 14th Street, E. 30th Street, University Avenue and the Des Moines River has been designated as primary nonattainment for suspended particulates. The rest of the Des Moines area is classified as secondary nonattainment.

### Carbon Monoxide

Carbon monoxide is generally accepted as the overall indicator of highway-related air pollution since its major source is the internal combustion engine and it does not react photochemically with other pollutants. A microscale analysis of the project corridor was done to predict carbon monoxide concentrations. The dispersion model used was CALINE 3. Emission factors were calculated from the MOBILE 3 computer program. Assumptions made in the MOBILE 3 program were:

% Cold Start Noncatalyst =	20.6
% Hot Start Catalyst =	27.3
% Cold Start Catalyst =	20.6
VMT Breakdown:	
LDGV	60.4%
LDGT1	9.1%
LDGT2	8.9%
HDGV	4.1%
LDDV	7.8%
LDDT	4.6%
HDDV	4.4%
MC	0.7%
Low Altitude	
No Inspection/Maintenance Program	
No Anti-Tampering Program	
Nationwide Tampering Rates	
Ambient Temperature	0°F

The ambient temperature was selected to be 0°F to provide the worst case emission levels.

In the CALINE 3 program, the following assumptions were made:

Averaging Time =	60 Minutes
Surface Roughness ( $Z_0$ ) =	100 cm
Settling Velocity =	0 cm/Sec.

Deposition Velocity =	0 cm/Sec.
Wind Speed =	1 m/Sec.
Atmospheric Stability Class =	F
Mixing Height =	1,000 m
Background Concentration (C <sub>B</sub> ) =	2 ppm
Traffic Volumes (See Table A.1, Appendix A)	

All wind directions (in 20-degree increments) were checked, with a wind speed of 1 m/Sec. and stability Class F in order to find the worst case.

The eight-hour concentration (8-Hr) was approximated by the following formula:

$$C_{8-Hr} = (C_{1-Hr} - C_B) \sqrt{8} + C_B$$

The results are presented in Tables 5.23 and 5.24. These results indicate that with the new roadway, the carbon monoxide levels will experience a general decline in most areas. This is due to the continued reduction in emission levels in new vehicles. Some areas, including Sites 11, 14, 16, 18, 37, 42 and 43, will experience increased pollutant levels. However, the new levels will still be below the one-hour (35 ppm) and eight-hour (9 ppm) primary and secondary standards. Other areas, including the CBD, the intersection of Fleur Drive and Locust Street, and the E. 14th Street corridor will show an improvement in air quality.

Under normal atmospheric conditions, carbon monoxide levels would have a maximum concentration of 3 ppm.

#### Suspended Particulate

Only a small percent of the total suspended particulate (TSP) in Polk County is emitted from motor vehicles (Iowa State Implementation Plan). Any change in the transportation system, such as the CBD Loop Arterial would have a negligible effect on this total.

Fugitive dust would originate from the new paved road at an average rate of 11 grams/vehicle mile. Using 381,755 vehicle miles/day times 365 days/year yields  $1.53 \times 10^9$  grams/year or 1,690 tons/year in the project corridor. Under the No Action alternative, suspended particulate totals would be  $11 \times 373,729 \times 365 = 1.50 \times 10^9$  grams/year or 1,654 tons/year for the same area. These numbers indicate that there would be an insignificant difference (two percent) between a construction alternative and No Action. This difference (36 tons/year) is only .1 percent of the total TSP from area sources in Polk County.



During construction, the levels of total suspended particulate will increase. The earthwork associated with road construction combined with the wind make this increase inevitable. Construction of I-380 in Cedar Rapids increased the TSP levels by 20 to 35 mg/m<sup>3</sup>. However, these adverse impacts can be minimized by using procedures to keep the exposed areas watered down. Stockpiles of earth along with trucks carrying cut or fill material should be kept covered as much as possible. Contractors involved with the construction will be required to comply with the Iowa "Rules and Regulations Relating to Air Pollution Control" (Chapter 900, Iowa Administrative Code). Specifically, adherence to the sections concerning Fugitive Dust, Visible Emissions and Permits would be required in the construction contracts in an effort to minimize the short-range effects upon air quality within the project corridor. Open burning will be prohibited within the city of Des Moines.

#### State Implementation Plan

This project is in an air quality nonattainment area which has transportation control measures in the State Implementation Plan (SIP) which was approved by the Environmental Protection Agency on March 3, 1978. The FHWA has determined that both the transportation plan and the transportation improvement program conform to the SIP. The Federal Highway Administration has determined that this project is included in the transportation improvement program for the Des Moines area. Therefore, pursuant to 23 CFR 770, this project conforms to the SIP.

#### FLOOD PLAIN IMPACTS

The CBD Loop project will provide a transportation system over the two major riverine systems within the city of Des Moines. Alternatives A, B and the Preferred Alternative provide for a single crossing over the Des Moines River. The location of this crossing is the same for the three alternatives. For the Raccoon River, Alternatives A and B provide two crossings, while the Preferred Alternative provides for three Raccoon River crossings. The general location of these crossings is shown on Figures 5.6 and 5.7. These figures also indicate general flood plain floodway limits.

In this discussion, reference will be made to river locations by river mile and/or linear feet above the respective river's mouth. In addition, specific reference points may be discussed in terms of "left bank" or "right bank" of the river's channel. In this sense, the left bank will designate the bank of a river's channel located on the left side of an individual looking toward the downstream direction of the river. Conversely, the right

bank of a river or stream designates the bank of the system on the right side of an individual as that individual looks toward the downstream direction of the river.

The Des Moines River crossing for the project occurs approximately at Des Moines River mile 201.8. Primary usage of flood plain areas for the Des Moines River reach affected by the project are strictly recreational. The existence of the flood control works creates a full flow hydraulic channel with no storage available for flood flows. In addition, the floodway is confined to the levee locations. The flood control works provide for a limited flood plain area within the levees' boundaries. Consequently, usage of areas riverward of the levees is during non-flood events and is limited to recreational activities such as fishing or boating.

For the Raccoon River, a river crossing (Indianola Avenue connection) located downstream of the existing Jackson Street bridge is inclusive for Alternatives A, B and the Preferred Alternative. This proposed crossing will span existing flood control works on the Raccoon River. The flood control works provides for full conveyance of flood flows and does not provide any flood storage in areas adjacent to the channel. Alternatives A and B provide for one additional Raccoon River crossing. While the two alternative crossings vary with respect to mainline and ramp designs, both crossings are located upstream of Fleur Drive, approximately 14,300 feet above the mouth of the Raccoon River. The Preferred Alternative has two additional Raccoon River crossings. These locations are approximately 12,600 feet above the Raccoon River mouth and approximately 14,300 feet above the Raccoon River mouth. In this general reach of the river, flood control facilities exist on the left bank of the river. The right bank area provides a significant overflow area and is not considered a principal storage area since during floods of magnitude the lower lying areas will be areas of floodwater conveyance. The right bank area is used for the most part by the city of Des Moines Water Works. Primary usage of the Raccoon River in the crossing locations is limited to recreational functions.

Floodway boundaries for the Raccoon River are confined to levee locations where the flood control facilities exist. The CBD crossing of the Raccoon River downstream of the Jackson Avenue bridge will span the flood control levees and consequently the floodway. At the proposed crossings adjacent to Fleur Drive, the floodway is confined on the left (north) bank by an existing flood control levee. The floodway limits for the right bank flood plain extend beyond the project limits for the CBD alternative alignments. No flood control facilities exist in the Fleur Drive area for the right bank areas. Due to the sharp bends in the channel configuration in this area, the floodway limits cross perpendicular to Fleur Drive approximately 4,500 feet south of

the southern abutment of the Fleur Drive bridge. Flood profile information available from the Flood Insurance Study, city of Des Moines (preliminary copy of 1985 revisions) indicate that the 100-year flood will overtop Fleur Drive south of the existing bridge for approximately 5,800 feet. Consequently, all three alternatives are within the floodway of the Raccoon River. This connection to Fleur Drive provided by the alternatives is an integral part of the project concept. Due to this fact and the extent of the flood plain width, an alternative to avoid location in the flood plain was not practical.

Both the Des Moines and Raccoon Rivers provide good habitat for fish and other aquatic life. The flood plain of the Raccoon River also provides significant habitat for plant and animal species. Section 4 provides a description of these habitats (p. 4.1-4.5).

The Raccoon River and the Des Moines River have been subject to several engineering studies and analyses concerning the magnitude and frequency of respective floods for each river system. Of significant focus in planning the CBD Loop river crossings was the U.S. Army Corps of Engineers' efforts in the hydraulic study and resulting flood control works for the Raccoon River and the Des Moines River. In addition, the Flood Insurance Study, City of Des Moines, Iowa, by the Federal Emergency Management Agency, was utilized in coordinating regulatory discharge flows and flood frequencies with the proposed riverine crossings.

The Raccoon River and Des Moines River flood control works were constructed by the U.S. Army Corps of Engineers and accepted by the city of Des Moines in November, 1971. The flood control improvements consisted of earthen levees and concrete flood walls designed to control flood flows. While the design flood profile elevations for the flood control projects may differ from or exceed the regulatory 100-year flood profile elevations, the river crossings for the Des Moines CBD network are designed to accommodate the predominating or greater design flood profile elevation.

The Des Moines River reach pertaining to this project is downstream of the Saylorville Reservoir. This reservoir acts as a flood control facility and recreational lake. The reservoir has been in place since April 12, 1977, and the greatest discharge of record at this time occurred in June, 1984, and was 29,000 cfs. This discharge corresponds to a 67-year flood based on the regulation by the reservoir. The flood discharge below the confluence of the Raccoon River was 47,300 cfs for this same event and was a 33-year flood based on the regulation by the reservoir. In combination, the Saylorville Reservoir and the flood control levees provide for a low flood damage potential on the Des Moines River in the CBD project area.

As previously outlined, the river crossing of the Des Moines River is similar for each of the three alternatives and will cross existing flood control levees on both banks. The construction of this crossing is intended to have very little impact on the flood plain and floodway since the bridge will span the channel with a low steel elevation above the Corps of Engineers' design flood profile elevation.

The proposed Indianola Avenue connection over the Raccoon River will be correlated with existing flood control facilities. This crossing will span across earthen flood control levees. The left bank levee was constructed as a part of the Corps of Engineers' project, while the right bank levee was constructed by the city of Des Moines. This bridge will have low steel above the design profile elevation for the flood control levees.

The remaining crossings on the Raccoon River are located near the existing Fleur Drive bridge. In this reach of the Raccoon River, flood control works (earthen and concrete wall levees) have been constructed on the left bank of the Raccoon River. This reach of the Raccoon River is also the beginning of a wide bend in the channel. As available flood plain mapping outlines, the 100-year flood plain is widespread on the right bank due not only to topographical conditions but to the natural influence the river bend creates during high-water events. The area of the right bank is occupied by the city of Des Moines Water Works for water supply and treatment. At present, facilities are either built on elevated sites for flood protection or have ring levees protecting facilities from flood damage.

Appendix C provides detailed location drawings of the proposed bridge crossings for the Preferred Alternative. Appendix D provides similar location drawings for Alternatives A and B.

With the new crossings constructed, no significant impact is anticipated from increased development in flood plain areas adjacent to the crossings. The crossing of the Des Moines River and the crossing of the Raccoon River below Jackson Street will span the flood plain which is confined by the respective flood control works. Federal and State of Iowa criteria prohibit development or encroachment in areas riverward of the levee locations. The crossings near Fleur Drive are not anticipated to change existing flood plain characteristics nor minimize recreational usage of the river in this reach. As outlined, the major portion of flood plain areas in this river reach are utilized by the Des Moines Water Works.

In planning the three alternative crossings, detail was directed toward the mitigation of significant flood profile elevation. The encroachment and backwater effects of the placement



of the piers and any fill in the floodway will be analyzed during preliminary structure design to ensure that all requirements of existing state and local flood plain ordinances are met. Preliminary estimates of fill quantities for each crossing have been calculated. Estimated fill quantities include pier quantities, backfill quantities for pier construction, ramp fill and approach road fill. Estimated fill quantities represent volumes below the 25-year discharge (Q<sub>25</sub>) as required for submittal in U.S. Army Corps of Engineers' Section 404 Permit applications.

CBD Arterial Over Des Moines River	
(All Alternatives)-----	6,000 Cubic Yards
S.E. 15th Street Over Wetland Area-----	1,500 Cubic Yards
Indianola Avenue Connection	
(All Alternatives)-----	3,500 Cubic Yards
Alternative A - Raccoon River Crossing	
Near Fleur Drive-----	26,000 Cubic Yards
Alternative B - Raccoon River Crossing	
Near Fleur Drive-----	60,000 Cubic Yards
Preferred Alternative - Raccoon River	
Crossings Near Fleur Drive-----	130,000 Cubic Yards

General locations of fill are shown on the plates in Appendices C and D. Preliminary profile grades indicate fill heights will vary from 0 feet to 25 feet.

While detailed design for each river crossing has not been completed at this planning stage, it is acknowledged that each crossing will be subject to careful review by the appropriate state and federal agencies and review boards. As such, the layout for each crossing has been accomplished with recognition of the various state and federal criteria for hydraulic considerations as well as environmental aspects. Early coordination for the river crossings was conducted with the Iowa Natural Resources Council (now Iowa Department of Natural Resources) in office meetings and with the U.S. Army Corps of Engineers through correspondence.

No change is anticipated in the established regulatory floodway. The project river crossings of the Des Moines River will span the flood control levee system on the Des Moines River. The regulatory floodway is within the levees for this reach of the river. The project river crossing over the Raccoon River below the Jackson Street bridge also will span existing flood control levees on both river banks. The Raccoon River regulatory floodway for this location is within the flood control levees.

The remaining two river crossings are over the Raccoon River at the Fleur Drive location. This reach of the Raccoon River has

a flood control levee located on the north side of the river but does not have a levee on the south side of the river. The regulatory floodway extends approximately 4,900 feet in width at the Fleur Drive location. The established flood plain and floodway are based on extensive overtopping of Fleur Drive south of the existing and proposed river crossings. This area will remain available for flow during flood events.

In summary, the river crossing locations do not significantly impact flood plain areas or their recreational benefits. Also, additional development is not anticipated in these flood plain areas due to existing federal, state and city of Des Moines criteria and present land usage.

#### IMPACTS TO NATURAL FEATURES

The natural features of the project area are described in Section 4, "Affected Environment." The proposed project is not expected to have any major impacts on these resources. The following concentrates on areas where some impacts are expected.

##### Vegetation Impacts

Several areas of native vegetation will be removed by the project. These areas may be seen in Plates 4 and 11, Appendix C. A ground survey of these areas was conducted during 1981. The vegetation was found to consist primarily of flood plain species of trees, shrubs, grasses and forbs. Several vegetation types exist and are associated with elevational gradients within the flood plain. On areas that are frequently flooded, the flood-tolerant Willow (Salix sp.), Silver Maple (Acer saccharinum) and Box Elder (Acer negundo) occur. On slightly higher ground that is rarely inundated, a bottomland forest dominated by American Elm (Ulmus americana), Bur Oak (Quercus macrocarpa), Green Ash (Fraxinus pennsylvanica) and Black Walnut (Juglans nigra) occurs.

This type of vegetation is very common in river flood plains throughout the state and occurs at many other locations within the city limits of Des Moines. The project will remove approximately five acres of this flood plain vegetation. The project will also remove approximately two acres of upland vegetation, dominated by Oaks (Quercus sp.) and Hickories (Carya sp.). None of these plant species are endangered or threatened.

Plant removal from the project area will have negative impacts on wildlife in the area that uses it as habitat. It will also have aesthetic impacts (see next section). Revegetation within the project right-of-way will partially mitigate for the loss of this vegetation.

## Wetlands

A wetland area will be crossed by the project (refer to Plate 11, Appendix C). The area is approximately 10 acres in size and supports wetland vegetation along its edges. It is crossed by three railroad embankments. It appears to be the remnants of a much larger wetland, extending to the east, which has been filled for some time. It is dominated by emergent vegetation around its perimeter and classified as a Palustrine Emergent Persistent Wetland (U.S. Fish and Wildlife Service classification). The primary beneficial use of the wetland is habitat for wetland plant and animal species. This is not a rare wetland type for Iowa or for the nation.

The proposed project will involve bridging this wetland. Three sets of bridge piers will be constructed in the wetland, involving approximately 1,500 cubic yards of fill. This is not anticipated to have a significant affect on this wetland nor on the animal species that inhabit it. During construction, some disruption is expected to occur. Mats and other protective measures will be required for construction in this area. Erosion control measures will be required of contractors. The bridge design will incorporate measures to divert the storm water from the wetland area. It is anticipated that a Section 404 Permit for placing of piers in this wetland will be required.

Contacts with the U.S. Army Corps of Engineers, Rock Island, Illinois, the U.S. Fish and Wildlife Service, Rock Island, Illinois, and the Iowa Conservation Commission (now Iowa Department of Natural Resources), Des Moines, Iowa, have been made regarding this wetland in accordance with Executive Order 11990.

The original design concept, as presented in the Draft EIS, was to fill four acres of this wetland rather than bridge it. In response to comments by the U.S. Fish and Wildlife Service, the alternative of bridging was added and evaluated during the preparation of the Final EIS and included in the Preferred Alternative. This alternative proved to have several advantages. Besides avoiding the filling of the wetland, it also proved to be more cost-effective (\$730,000.00 for bridging versus \$1,140,000.00 for filling). The large amounts of fill required to be trucked into this area would have been very costly. This concept was reviewed and approved by the U.S. Fish and Wildlife Service, Rock Island District, during the preparation of the Final EIS (refer to coordination letter, Part 4, Appendix E).

Other alternatives that would avoid crossing this wetland were considered but were not considered feasible because they would have to be located too far to the east to serve the project need and meet traffic demands.

## Wetlands Finding

In accordance with Executive Order 11990, project impacts to this wetland area have been evaluated. At the request of the U.S. Fish and Wildlife Service, the project design was modified to eliminate filling of the wetland. Three sets of bridge piers will be placed in the wetland instead. Measures to minimize harm include the use of construction mats and erosion control measures during construction and the diversion of storm water runoff away from the wetland area after the project is in operation. There are no practicable or feasible alternatives to crossing this wetland and still meet the purpose of the project.

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed new construction in wetlands and that the proposed project includes all practicable measures to minimize harm to wetlands which may result from such use.

## Water Quality and Water Supply

The Preferred Alternative will have three crossings of the Raccoon River and one crossing of the Des Moines River. The Raccoon River in this area is one of the surface water supply sources for the city of Des Moines, and the alluvial aquifer in this area is a groundwater source (see Section 4, "Affected Environment," for discussion). Water is collected and stored in an underground gallery system, part of which underlies an area crossed by the project (refer to Figure 5.8 and Plate 4, Appendix C).

The Iowa Department of Environmental Quality (now Iowa Department of Natural Resources) was contacted regarding the project in early 1983. Areas where the project crossed the Des Moines and Raccoon Rivers and the Des Moines Water Works facility were discussed with the staff. They indicated that their major area of concern was the impact on the water supply for the Des Moines Water Works. The project will require a Section 401 Water Quality Certification for each of the four river crossings.

Consultation with staff of the Des Moines Water Works in 1983 and again in 1985 indicated their concern for the effect of pollutants carried in the highway runoff on the water storage areas or water intake areas on the Raccoon River. The design of the project will provide for the diversion of highway runoff from these sensitive areas specifically to a point below the Water Works dam on the Raccoon River. They are also concerned about the effect of the project on future expansion plans. A number of interchange layouts in this area were examined and the Preferred Alternative layout is one that was approved by the Water Works



staff. Coordination with the Des Moines Water Works staff will be maintained during the design and construction of the facility (refer to discussion of impact on utilities earlier in this section for further information).

In 1986, the results of an EPA investigation of a hazardous waste site that was contaminating the water supply in this reach of the Raccoon River were released. This site, the Des Moines TCE site, is listed on the EPA national Priorities List of uncontrolled hazardous waste sites. It is located to the west and southwest of the Fleur Drive bridge and was found to be the source of contamination of the groundwater being drawn into the Water Works North Gallery System. The site is currently undergoing remedial action including:

- o Installation of groundwater extraction wells in contaminated areas.
- o Treatment of this extracted water by air stripping and return to the Raccoon River.
- o Construction of a barrier wall across the North Gallery to isolate the northern portion of the gallery.
- o Discontinue use of this northern portion for water supply.

The proposed CBD Loop Arterial will pass through the northern area of this TCE site. Construction will involve bridge piers, bridge abutments and roadway on fill. This area will contain two of the groundwater extraction wells and their associated pipes. Communications between the designers of the EPA remedial action and the CBD Loop Arterial engineers were initiated in 1986 to ensure that these two projects would be compatible. Slight modifications in the locations of two of the extraction wells and protection of the pipes where they would be overtopped by roadway fill were recommended. The CBD Loop Arterial is not anticipated to have any significant impacts on this remedial action. During final design of this project, bridge and roadway plans in this area will be coordinated with the U.S. EPA. If any excavation is required in this area, disposal of the spoil will be conducted in accordance with EPA guidelines.

Long-range effects of the proposed project on water supply and on water quality in the Des Moines and Raccoon Rivers are predicted to be insignificant. Street deicing agents and other surface deposits will be present in runoff into these rivers where no roadway now exists. With the large volumes and flow rates of these rivers, the effect of this runoff is predicted to be minimal. During winter low-flow periods, the dilution effect on pollutants would not be as great, however.

There would be a possible increase in the use of weed control products along the new roadway and an increase in chemical and lubricant spills. Short-term effects on water quality will occur during construction (refer to "Construction Impacts" later in this section).

#### Mineral Resources

The project will be crossing near an area that contains abandoned underground coal mines. This area is to the east of the upper northeast corner of the alignment between E. Court Avenue and the railroad tracks to the south (see Plate 11, Appendix C). It is not anticipated that the project will cross this area. Coordination with the Iowa Geological Survey regarding this area will be maintained during the design of the project should an alignment variation to the east occur.

#### Other Resources

The project will not impact any lands of high agricultural productivity, wild and scenic rivers, or habitats of threatened or endangered species.

#### IMPACTS TO AESTHETIC QUALITIES

Aesthetic considerations for a new roadway include: how well the highway blends with the terrain and surrounding landscape features; to what extent it complements the natural scenic amenities and planned open space uses of the corridor; the views of the surrounding environment provided the motorist; the view of the road from adjacent areas; and its compatibility with the local open space planning.

The roadway will have both positive and negative effects on these factors. Major aesthetic impacts are depicted in Figure 5.9 and discussed in the following paragraphs.

Trees and other vegetation will be removed from several areas in the corridor. This removal will have negative visual impacts on the area, particularly where wooded bluffs are crossed. The project will involve cuts into two of these bluffs, both of which are very scenic. Landscaping and grading plans in these areas will be developed to blend in with the surrounding bluff landscape as much as possible.

The project will visually intrude into several parks (see Impacts to Parks and Recreation Areas in this section). Several of these are adjacent to existing roadways, and the project will not provide significantly more intrusion than already exists (Hawthorn Park, Riverside Park). Visual intrusions into more

remote areas, where no roadway now exists or where there is now little traffic, will occur in the Water Works area and Sam Cohen Park. The roadway in Water Works Park will obstruct or detract from existing scenic views of the park and the Raccoon River from the bluff areas to the north and from the Fleur Drive bridge.

The roadway adjacent to Sam Cohen Park will not obstruct scenic views, but its large scale and high noise impacts will detract greatly from the existing park experience that it provides. Because of this and other impacts of the project, this park will be relocated as part of the project.

The roadway will improve the existing scenic qualities adjacent to the Woodland-Willkie - Sherman Hill area. Here a landscaped berm or wall is proposed to buffer the neighborhood from the project. Also, strips of land along the CBD Loop would have the potential for landscaping and joint development as open spaces. Highway and right-of-way design in this area will be coordinated with the Sherman Hill Association and the Woodland-Willkie Neighborhood Board.

Another positive effect of the roadway on the visual qualities along the alignment will be the removal of some deteriorated structures and other features from the right-of-way area. This impact will be beneficial along Harding Road in the vicinity of the Sherman Hill area, in the industrial area south of the CBD core area, along the Raccoon Street corridor and along the S.E. 15th Street corridor.

Views from the road will be generally good. Most of the alignment is in a lowland area, below the downtown area and the State Capitol Complex, both of which occur on the much higher river bluffs. Excellent views of the downtown skyline and the State Capitol occur along most of the eastern half of the route. In some of the western areas, scenic views of the wooded bluffs are present. Terrace Hill, the Governor's mansion, may be seen on one of these bluffs.

Views of the road will be generally positive, except for the Water Works area which was previously described.

Several areas offer the potential for joint open space development adjacent to the roadway. These will be considered by the city during the design of the project.

#### CONSTRUCTION IMPACTS

Construction of any of the project will result in certain short-range adverse environmental impacts. Noise from heavy construction equipment and haul trucks is a relatively short-range but nonetheless disturbing impact upon sensitive land use

near the construction site. In an effort to minimize the adverse effects of the construction period, contractors will be required to equip and maintain trucks and machinery so as to limit noise emissions. Contract specifications will also restrict especially noisy construction activity to the daytime hours in order to minimize conflict with noise-sensitive nighttime activities.

Air quality will also be subjected to short-range deterioration in the construction areas. Grading operations and the transportation and handling of materials, such as earth and aggregates, will result in the release of airborne dust. Emissions from construction machinery will add to the motor vehicle classes of air pollution.

Contractors involved with the construction will be required to comply with the Iowa "Rules and Regulations Relating to Air Pollution Control" (Chapter 400, Iowa Administrative Code). Specifically, adherence to the sections concerning fugitive dust, visible emissions and permits will be required in the construction contracts in an effort to minimize the short-range effects upon air quality within the project corridor. The above regulations include the following stipulations, among others:

Fugitive Dust - Reasonable precautions will be taken to prevent the discharge of fugitive dust including the use of such materials as water, chemicals, asphalt or oil on surfaces which cause fugitive dust. Installation and use of containment or control equipment to enclose or otherwise limit the emissions resulting from the handling and transfer of dusty materials will be required. Covering, while in motion, of open-bodied vehicles transporting materials likely to give rise to airborne dust will also be required.

Visible Emissions - Exhausts from construction equipment, asphalt plants and Portland Cement Concrete batching plants are required to comply with Iowa Air Quality Commission's emission standards.

Open burning will not be allowed during construction. The Iowa Administrative Code specifically prohibits the open burning of landscape waste in Des Moines.

Temporary deterioration of surface water quality will result from grading, bridge construction and other construction activities. Increased turbidity and siltation, caused by erosion of exposed land and disturbance of the stream beds, will be the greatest construction impact on water quality. Runoff from disturbed areas may also increase the levels of BOD, metals, pesticides and nutrients in the streams, depending on the land use and rainfall at the time of construction. Groundwater quality is not expected to be appreciably affected by construction operations.



To reduce impacts on water quality, contractors will be required to minimize the amount of area cleared during any time period and will employ erosion control measures at all stages of construction. "Standard Specifications for Highway and Bridge Construction," Iowa Department of Transportation, will be required as a contract document. Construction will also be in compliance with the city of Des Moines Ordinance No. 9384 regarding erosion and sedimentation control. Control measures will include silt fences, silt basins, temporary berms and dikes, drains, gravel, mulches and grasses as appropriate. These measures will apply to haul roads and borrow sites as well as the permanent right-of-way. Sanitary facilities will be required at the construction sites. Suitable storage areas and careful handling of potentially harmful materials will be required by the contractor.

Traffic patterns and existing access points near the proposed facilities will be affected by construction activities. Construction schedules will be coordinated in advance to minimize the effects of such disruption. Suitable detours will be required to maintain traffic circulation, and areas to be torn up during any time period will be controlled to limit the extent of disruption. Contractors will be required to maintain access within a specified distance of any inhabited areas to assure continued fire protection and emergency services.

#### ENERGY IMPACTS

The principal energy consuming activity of highway transportation is vehicle operation. All alternatives other than No Action would improve traffic flow characteristics and reduce vehicle fuel consumption. With the No Action alternative, traffic flow conditions would not improve and would, in fact, become more interrupted as traffic volumes increase in later years.

Estimated fuel consumption for the alternatives is summarized in Table 5.25. These estimates are based on the projected traffic volumes, running speeds and estimated traffic delays. Total fuel savings throughout a 20-year design period would be approximately ten million gallons based on the above estimate.

#### SUMMARY AND COMPARISON OF ALTERNATIVES

The following summarizes the benefits and adverse effects of the Preferred Alternative and compares it with Alternatives A and B.

**Benefits and Adverse Effects of  
the Preferred Alternative**

**Benefits:**

1. Provides a southern bypass around the CBD for through traffic.
2. Provides better access and improved roadway facilities for industrial areas in the central city area.
3. Relieves traffic congestion in the CBD area on most east-west and some north-south streets.
4. Facilitates city land-use policies that are aimed at revitalizing the industrial and commercial areas of the central city.
5. Supports the redevelopment projects recently completed or underway in the CBD; enhances pedestrian usage of the CBD.
6. Improves accessibility to the CBD from the southeastern and southwestern areas of the city.
7. Relieves traffic congestion in the vicinity of the Fleur Drive and Locust Street intersection.
8. Provides a traffic level of service of C or better through most of the project area; most streets in the area currently operate at Level D or lower.
9. Reduces traffic accidents, particularly from I-235 to Locust Street, in the CBD along E. 14th Street-E. 15th Street and along S.E. 14th Street.
10. Improves accessibility to the Des Moines airport from northern and northeastern areas of the city.
11. Provides improved accessibility for police and ambulance services to the central city area.
12. Provides improved fire protection to some central city areas.
13. Reduces traffic volumes and associated noise and carbon monoxide levels on many local streets within central city neighborhoods, especially the Roadside and Pioneer-Columbus Areas.

14. Reduction of motor vehicle emissions and traffic-related noise levels in the CBD.
15. Increased safety for pedestrian and bicycle travel on many residential streets, particularly in the Roadside Area and the Pioneer-Columbus Area.
16. Increased school pedestrian safety for Des Moines Technical High School and St. Anthony's Catholic School.
17. Provides opportunities for joint use of land, particularly along the Harding Road corridor.
18. Serves as a barrier or strengthens the existing barrier between incompatible adjacent land uses (residential and industrial) in the Raccoon Street and S.W. First Street corridors.
19. Improves accessibility and/or visibility for several churches, including Kingsway Cathedral and Vine Street Gospel Chapel.

**Adverse Effects:**

1. Displaces 466 residents from central city neighborhoods. These neighborhoods contain residents with lower incomes and have higher percentages of minorities than does the city as a whole.
2. Displaces 42 businesses and seven warehouses from the central city area. An estimated 420 employees would be affected.
3. Displaces five churches: King of Kings, Jesus Assembly, All Nations Church of God in Christ, Southeast Assembly of God Church and Clifton Heights Presbyterian Church.
4. Displaces two structures that are considered eligible for nomination to the National Register of Historic Places.
5. Crosses an area with high potential for containing significant archaeological materials.
6. Requires some right-of-way from two city parks (Sam Cohen Park and Riverside Park), four open space areas along the Des Moines and Raccoon river fronts and in the Des Moines Water Works.
7. Relocation of a short segment of a bike path in the East River Front Open Spaces Development Area.

8. Requires shifting of the main entrance to Woodland Cemetery approximately 50 feet to the west.
9. Increases noise levels in several park and open space areas adjacent to the alignment.
10. Increases noise levels at five churches adjacent to the alignment.
11. Increases noise levels in several residential areas.
12. Reduces the property tax base and tax revenue.
13. Increases noise levels and suspended particulates during construction in the immediate vicinity of the project.
14. Temporary deterioration of surface water quality during construction.
15. Disruption of local traffic patterns during construction.
16. Placement of piers in a wetland area.
17. Impairs pedestrian travel in three residential areas.

#### Impacts of the No Action Alternative

#### Possible Benefits:

1. Would displace no residences or businesses.
2. No reduction in the city's tax base.
3. Would not destroy any historic buildings or intrude upon any historic districts or archaeological sites.
4. Would not displace any churches.
5. Would not require any parkland.
6. Would not involve any new crossings of the Des Moines or Raccoon Rivers or wetlands.
7. No cost to the city and state to construct the facility.



#### Possible Adverse Effects:

1. Increase in traffic congestion and inefficient fuel consumption for traffic in the central city areas of Des Moines.
2. Increase in traffic noise, vehicle emissions and traffic accidents in the central city area.
3. Increased street maintenance costs for many existing streets.
4. Could require the removal of parking in some areas to accommodate increased traffic.
5. Continued deterioration of the industrial areas in the central city because of inadequate accessibility and poor street conditions.
6. Inconsistent with the Proposed 2000 Land Use Plan for the CBD and adjacent areas.
7. Increased response time for emergency services to some central city areas because of traffic congestion.
8. Continued increases in traffic through several residential areas.

#### Comparison of Alternatives

Alternatives A and B would have benefits and adverse effects similar to those described for the Preferred Alternative. The following discussion points out the differences between these alternatives.

The positive and negative effects of Alternatives A and B compared to the Preferred Alternative are:

1. Alternatives A and B have one less crossing of the Raccoon River than does the Preferred Alternative.
2. Alternatives A and B have more impact on the existing and planned facilities and water storage areas of the Des Moines Water Works than does the Preferred Alternative.
3. Alternative A provides poorer service to the industrial area south of Market Street than does the Preferred Alternative or Alternative B.

4. Alternative A divides the commercial office area in the downtown west area in the vicinity of 15th Street.
5. Alternative A isolates the area west of 15th from the CBD.
6. Alternative A is not as consistent with the proposed land-use plans for this area as is the Preferred Alternative or Alternative B.
7. Alternatives A and B displace one more significant historic/ architectural structure than does the Preferred Alternative.
8. Alternative A displaces 7 more businesses in the downtown west area than does the Preferred Alternative or Alternative B.
9. Alternatives A and B would displace more businesses in the Harding Road-Grand Avenue area (7-15) than the Preferred Alternative.
10. Alternatives A and B would displace more people (20-126), housing units (15-63), and single-family dwellings (4-9) than the Preferred Alternative.
11. Alternatives A and B would intrude more upon the Sherman Hill Historic District than would the Preferred Alternative.

The positive and negative effects of Alternatives 1A and 1B (interchange solutions) compared to Alternatives 2A, 2B and the Preferred Alternative (intersection solutions) are:

1. Provides for safer, faster and more efficient traffic flow in the north-south segment of the project in the vicinity of Ingersoll Avenue.
2. More efficient traffic movement would result in a slightly reduced vehicle emissions in the nearby residential areas.
3. Displaces 78 more residents and 25 more housing units in the vicinity of the Sherman Hill area.
4. Displaces 9 more businesses near the Sherman Hill area in the vicinity of Ingersoll Avenue.
5. Displaces one more significant historic/architectural structure (Cultural Site 2A.2).

6. Requires a small amount of right-of-way from Chamberlain Park.
7. Intrudes more into the Sherman Hill Residential area and upon the Tech High athletic field.

#### Mitigative Measures

1. Relocation assistance to displaced owners and tenants of residential, commercial and nonprofit organizations.
2. Acquisition payments to all owners whose property is acquired.
3. Landscaped buffer areas where the roadway borders residential areas and parks.
4. Noise abatement measures in one residential area.
5. Pedestrian crossings in four residential areas.
6. Measures to divert highway runoff from collecting in the water storage facilities in Des Moines Water Works and in a wetland.
7. Measures to minimize harm to a wetland during construction.
8. Archaeological testing and salvaging of any materials related to Fort Des Moines No. 2, city dump or prehistoric Indians if located within the project right-of-way.
9. Relocation of significant historic and architectural properties.
10. Documentation of significant historic and architectural properties that are demolished.
11. Measures to control noise, air pollution and erosion during construction.

Rep/Dm2/AC7

TABLE 5.1  
 POPULATION AND HOUSING DISPLACEMENT DATA  
 FOR CENSUS BLOCKS AFFECTED BY PROPOSED ALTERNATIVES

Segments and Alternatives	Tract No. and Neighborhood	Total Population Displaced*	Number of Housing Units Displaced	Type of Housing Unit Displaced	
				Single-Family Dwelling	Apartment Units**
N-S Segment	27 Callanan				
1A, 1B		383	161	25	136
2A, 2B		305	136	20	116
Preferred		285	121	16	105
E-W Segment	34 Downtown				
1A, 2A		28	23	0	23
Indianola Avenue Segment	42 Weeks				
A, B, Preferred		19	7	5	2
E. 15th Street Ext. Segment	36 & 38 Willard				
A, B, Preferred		121	40	40	0
E. 15th Street Ext. Segment	37 Hiatt				
A, B, Preferred		41	13	10	3
TOTALS: Subalternative 1A		592	244	80	164
Subalternative 2A		514	219	75	144
Subalternative 1B		564	221	80	141
Subalternative 2B		486	196	75	121
Preferred		466	181	71	110

\*Estimated from 1980 Census data.

\*\*Includes duplexes and multi-unit apartments.

Rep/Dm2/AC1-1

TABLE 5.2

## POPULATION DATA FOR CENSUS TRACTS AFFECTED BY THE PROJECT

Neighborhood	Tract No.	Total Population	Percent						
			17 and Under	65 and Older	White	Non-White	Single	Married	Separated, Divorced, Widowed
Callanan	27	4,510	26	11	61	39	39	29	32
Downtown & Callanan	34	2,994	12	26	87	13	40	21	39
Weeks	42	1,969	27	14	98	2	25	52	23
Willard & Downtown	36	673	31	16	85	15	23	55	22
Willard	38	930	30	19	84	16	20	51	29
Hiatt	37	<u>2,842</u>	<u>29</u>	<u>14</u>	<u>93</u>	<u>7</u>	<u>28</u>	<u>45</u>	<u>27</u>
TOTAL/MEAN		13,918	25	16	81	19	34	36	30

Source: Census Summary Tape File 1, Iowa, 1980.

Rep/Dm2/AC1-2



TABLE 5.3

## HOUSING DATA FOR CENSUS TRACTS AFFECTED BY THE PROJECT

Neighborhood	Tract No.	Year-Round Housing Units	Occupancy Status			Race of Householder			Household Type			Persons Per Housing Unit
			Owner	Renter	Vacant	White	Black	Other	Families	Single Person	Non-Related Individual	
Callanan	27	2,411	407	1,705	299	1,385	639	88	942	1,009	161	2.1
Downtown & Callanan	34	1,744	78	1,518	146	1,405	133	58	365	1,163	68	1.5
Weeks	42	823	544	220	59	707	16	41	532	202	30	2.6
Willard & Downtown	36	238	177	49	12	155	39	32	179	43	4	3.0
Willard	38	375	242	113	20	293	56	6	243	95	17	2.6
Hiatt	37	<u>1,253</u>	<u>586</u>	<u>578</u>	<u>89</u>	<u>1,055</u>	<u>67</u>	<u>42</u>	<u>702</u>	<u>403</u>	<u>59</u>	<u>2.4</u>
TOTALS		6,844	2,034	4,183	627	5,000	950	267	2,963	2,915	339	2.0 (Mean)

Source: Census Summary Tape File 1, Iowa, 1980.

Rep/Dm2/AF3-1

TABLE 5.4

INCOME DATA AND POVERTY STATUS FOR  
CENSUS TRACTS AFFECTED BY THE PROJECT

Neighborhood	Tract No.	Median Income in 1979 for		Poverty Status (Income in 1979 Below Poverty Level) Percent of All	
		Families*	Unrelated** Individuals	Families	Unrelated Individuals
Callanan	27	\$ 8,581.00	\$ 6,365.00	34.1%	22.3%
Downtown & Callanan	34	25,903.00	9,247.00	19.4	35.7
Weeks	42	28,432.00	15,067.00	14.8	14.1
Willard & Downtown	36	10,865.00	3,896.00	20.0	54.2
Willard	38	8,542.00	4,200.00	33.3	43.1
Hiatt	37	12,440.00	7,067.00	16.6	21.9

Source: Census Summary Tape File 3A, Iowa, 1980.

\*Median income in 1979 for all families in Des Moines was \$20,755.00.

\*\*Median income in 1979 for unrelated individuals in Des Moines was \$7,561.00.

Rep/Dm2/AC1-3

TABLE 5.5  
POPULATION DATA FOR CENSUS BLOCKS  
AFFECTED BY THE PROJECT

Neighborhood	Tract No.	Block No.	Total Population	Age Groups			Race		Marital Status*			
				17 and Younger	65 and Older	Median Age	White	Non-White	Single	Married	Separated, Divorced or Widowed	
Callanan	27	220	113	32%	6%	24%	77%	23%	31%	30%	39%	
		208	4	...	...	...	...	...	...	...	...	
		213	8	...	...	...	75	25	...	...	...	
		212	21	17	17	19	40	67	33	33	33	
		516	40	25	18	40	50	50	42	47	11	
		211	50	34	6	25	92	8	36	22	42	
		313	146	32	3	24	75	25	35	33	32	
		120	147	36	3	22	51	49	28	43	29	
		121	51	39	2	23	62	38	35	32	33	
		125	2	...	...	...	100	---	...	...	...	
			119	80	15	10	27	41	59	61	26	13
		Subtotal		662								
		Downtown	34	815	117	---	46	64	98	2	39	13
Subtotal	117											
Weeks	42	323	16	19	38	52	62	38	44	0	56	
		307	12	...	...	...	100	---	...	...	...	
		306	15	47	7	24	100	---	27	40	7	
		301	2	...	...	...	100	---	...	...	...	
Subtotal		45										
Willard	36	324	28	29	11	30	54	46	33	42	25	
		323	6	...	...	...	50	50	...	...	...	
		321	2	...	...	...	---	100	...	...	...	
		242	5	...	...	...	80	20	...	...	...	
		241	20	30	20	40	100	---	7	53	40	
		240	10	...	...	...	100	---	...	...	...	
		239	14	...	...	...	86	14	...	...	...	
		236	2	...	...	...	100	---	...	...	...	
		237	6	...	...	...	---	100	...	...	...	
		226	22	27	18	25	86	14	6	75	19	
		119	6	...	...	...	17	83	...	...	...	
		225	9	...	...	...	...	100**	...	...	...	
		224	10	...	...	...	2	98**	...	...	...	
		Subtotal		140								
Willard	38	417	18	6	28	51	100	---	35	47	18	
		416	13	...	...	...	100	---	...	...	...	
		418	5	...	...	...	60	40	...	...	...	
		326	2	...	...	...	100	---	...	...	...	
Subtotal		38										
Hiatt	37	326	87	25	20	38	100	---	20	60	20	
		329	27	30	11	28	93	7	24	48	28	
Subtotal		114										
TOTAL			1,116									

\*For persons 15 years old or older.  
...Data suppressed for purposes of confidentiality.  
---None.  
\*\*Spanish speaking.  
Source: Census Summary Tape File 1, Iowa, 1980.

TABLE 5.6  
HOUSING DATA FOR CENSUS BLOCKS  
AFFECTED BY THE PROJECT

Neighborhood	Tract No.	Block No.	No. Year-Round Housing Units	Occupancy Status			Race of Householder			Household Type and Persons Per Household				
				Owner	Renter	Vacant	White	Black	Other	Families	Single Persons	Non-Family	Persons Per Household	
Callanan	27	220	56	2	48	6	40	9	1	26	18	6	2.3	
		208	2	---	2	---	ND	ND	ND	...	...	...	2.0	
		213	8	1	5	2	5	---	1	2	4	---	1.3	
		212	16	7	4	5	6	4	1	4	6	1	1.9	
		516	22	16	3	3	10	8	1	11	8	---	2.1	
		211	22	4	16	2	18	2	---	12	7	1	2.5	
		313	90	2	51	37	40	11	2	25	17	11	2.8	
		120	64	5	57	2	37	25	---	36	23	3	2.4	
		121	25	2	18	5	15	---	5	13	7	---	2.6	
		125	2	2	---	---	2	---	---	...	...	...	2.0	
			119	<u>62</u>	<u>3</u>	<u>42</u>	<u>17</u>	<u>35</u>	<u>8</u>	<u>2</u>	10	28	7	1.8
		Subtotal			369	44	246	79	208	67	13			
		Downtown	34	815	<u>101</u>	---	100	1	<u>99</u>	<u>1</u>	---	9	83	8
Subtotal			101				99	1	0					
5.79 Weeks	42	323	12	6	2	4	2	4	2	4	4	0	2.0	
		307	6	5	1	0	5	---	1	5	1	0	2.0	
		306	5	...	...	2	3	---	---	...	...	...	5.0	
		301	<u>2</u>	...	...	<u>1</u>	<u>1</u>	---	---	...	...	...	2.6	
Subtotal			25			7	11	4	3					
Willard	36	324	9	7	1	1	4	4	---	7	1	---	3.5	
		323	3	...	...	---	1	1	1	...	...	...	3.0	
		321	1	...	...	---	---	1	---	...	...	...	3.0	
		242	3	...	...	---	2	1	---	...	...	...	3.0	
		241	6	4	2	---	6	---	---	5	1	---	3.3	
		240	6	5	---	1	4	---	1	2	3	---	3.0	
		239	4	...	...	---	2	1	1	...	...	...	3.0	
		236	1	...	...	---	1	---	---	...	...	...	3.0	
		237	3	...	...	---	---	3	---	...	...	...	3.0	
		226	8	6	2	---	7	1	---	7	1	0	2.8	
		119	2	...	...	---	1	1	---	...	...	...	3.0	
		225	3	...	...	---	1	---	2	...	...	...	3.0	
			224	<u>3</u>	...	...	---	<u>1</u>	---	<u>2</u>	...	...	...	3.0
		Subtotal			52			2	30	13	7			
		Willard	38	417	8	3	3	2	5	---	1	4	1	1
416	5			3	2	---	5	---	---	4	---	1	2.6	
418	4			...	...	1	2	1	---	...	...	...	2.6	
326	<u>2</u>			...	...	---	<u>2</u>	---	---	...	...	...	2.6	
Subtotal			19			3	14	1	1					
Hiatt	37	326	31	21	8	2	27	---	2	25	4	---	3.0	
		329	<u>12</u>	<u>8</u>	<u>3</u>	<u>1</u>	<u>11</u>	---	---	<u>7</u>	<u>4</u>	---	2.5	
Subtotal			43	29	11	3	38	0	2	33	8			
TOTALS			609				400	86	26					

...Data suppressed for purposes of confidentiality.  
 ---None.  
 ND: No data.  
 Source: Census Summary Tape File 1, Iowa, 1980.

TABLE 5.7

COMPARISON OF POPULATION AND HOUSING DATA FOR THE  
CBD LOOP IMPACTED AREA AND THE CITY OF DES MOINES

	CBD Loop Displacements Preferred Alternative	Affected Census Blocks	Affected Census Blocks	Des Moines
Total Population	466	1,116	13,918	191,003
White Householder	107 (59%)*	400 (78%)	5,000 (80%)	69,282 (92%)
Non-White Householder	74 (41%)*	112 (22%)	1,217 (20%)	5,967 (8%)
65 or Older	45 (10%)+	156 (14%)+	2,226 (16%)	23,879 (13%)
17 or Younger	146 (32%)+	290 (26%)+	3,479 (25%)	49,410 (26%)
No. Housing Units	181	609	6,844	79,891
Single-Family	71 (39%)	200 (33%)++	3,041 (44%)	57,897 (72%)
Multi-Family	110 (61%)	217 (36%)++	2,223 (32%)	10,323 (13%)
Owner-Occupied	58 (32%)*	112 (18%)	2,034 (30%)	48,432 (61%)
Renter-Occupied	99 (55%)*	370 (61%)	4,183 (61%)	26,817 (34%)
Vacant	25 (13%)*	96 (16%)	627 (9%)	4,642 (6%)

\*Estimates based on block data.

+Complete age data only available at the census tract level. Block and displacement figures are estimates based on partial data and census tract data.

++Data on 31 housing units in these blocks were suppressed in the census tables.

TABLE 5.8

POPULATION AND HOUSING CHARACTERISTICS BY  
NEIGHBORHOOD FOR THE AREAS AFFECTED BY THE PROJECT

	Neighborhoods					Totals
	Callanant+	Downtown+	Weeks	Willard	Hiatt	
<b>Affected Blocks</b>						
Total Population	662	140	45	178	114	1,116
No. Housing Units	369	101	25	71	43	609
White Householder	207 (72%)	99 (99%)	11 (61%)	44 (67%)	38 (95%)	400
Non-White Householder	80 (28%)	1 (1%)	7 (39%)	22 (33%)	2 (5%)	112
No. Owner-Occupied Housing Units	44 (12%)	---	11 (44%)*	28 (40%)**	29 (67%)	112 (18%)
No. Vacant Housing Units	80 (22%)	1 (1%)	7 (28%)	5 (7%)	3 (7%)	96 (16%)
<b>CBD Loop Displacements (Preferred Alternative)</b>						
Total Population	285	---	19	121	41	466
No. Housing Units	121	---	7	40	13	181
White Householder	68 (56%)	---	3 (43%)	25 (63%)	11 (85%)	107 (59%)
Non-White Householder	53 (44%)	---	4 (57%)	15 (37%)	2 (15%)	74 (41%)
No. Owner-Occupied Housing Units	17 (14%)	---	5 (71%)	28 (70%)	8 (62%)	58 (32%)
No. Single-Family Dwellings	16 (13%)	---	5 (71%)	40 (100%)	10 (77%)	71 (39%)
No. Apartment Units	105 (87%)	---	2 (29%)	---	3 (23%)	110 (61%)

---None.

\*Data suppressed for seven housing units and not included in these totals.

\*\*Data suppressed for 23 housing units and not included in these totals.



TABLE 5.9

## CHURCHES IMPACTED BY THE CBD LOOP PROJECT

Church	Map Ref. No.*	Type of Impact	Segment of Alignment	Size of Congregation	Area Served
All Nations Church of God in Christ 711 S.E. 14th Court	1	Acquisition of Entire Property for R-O-W.	E. 15th Street Extension	Under 50	Immediate area and west side of city.
Clifton Heights United Presbyterian Church 1218 Indianola Avenue	8	Acquisition of Entire Property for R-O-W.	Indianola Avenue Connection	200**	East and west side of city.
Jesus Assembly Church 615 S.E. 15th Street	15	Acquisition of Entire Property for R-O-W.	E. 15th Street Extension	---	All areas of the city.
King of Kings Church 619 S.E. 15th Street	7	Acquisition of Entire Property for R-O-W.	E. 15th Street Extension	---	---
Southeast Assembly of God Church 715 S.E. 14th Court	37	Acquisition of Entire Property for R-O-W.	E. 15th Street Extension	Under 50	All areas of city.
Shiloh Baptist Church 1213 Scott Avenue	36	Increased Noise Levels and Negative Impact on Accessibility.	East-West Segment	---	---
St. Anthony's Catholic Church Indianola Avenue and S.W. First St.	30	Slight Negative Impact on Accessibility from Western and Southern Areas. Increased Noise Levels.	Indianola Avenue Connection	Over 2,000	Primarily the south side of the city.
Kingsway Cathedral 901 - 19th Street	18	Slightly Improved Accessibility.	North-South Segment	100-500	All areas of the city.
Vine Street Gospel Chapel 1441 E. Vine Street	38	Increased Noise Levels. Improved Accessibility and Visibility.	E. 15th Street Extension.	Under 50	All areas of the city.
Sheltering Rock Church 718 S.E. Allen Street	35	Increased Noise Levels. Improved Accessibility and Visibility.	East-West Segment.	Under 50	---

\*See Figure 4.2 and Plates 1-12, Appendix C, for map locations.

\*\*Number of families.

---Information not available.

TABLE 5.10

## COMMERCIAL DISPLACEMENTS OF THE CBD LOOP PROJECT - PREFERRED ALTERNATIVE

Census Tract & Neighborhood	Major Industry Group*							Totals
	Contract Construction	Manufacturing	Services**	Wholesale Trade	Retail Trade	Finance, Insurance, Real Estate	Vacant	
27 Callanan	1		5	3	2	3	3	17
34 Downtown		2	1	2				5
42 Weeks	1		1		2		1	5
36 and 38 Willard	2	2	2	4	2		2	14
<b>Total - Preferred Alternative</b>	<b>4</b>	<b>4</b>	<b>9</b>	<b>9</b>	<b>6</b>	<b>3</b>	<b>6</b>	<b>41</b>

\*Industry groups used by the Bureau of Census.

\*\*Services is a diverse category that includes business, recreation, repair, health, legal, education and other personal services.

Rep/Dm2/AF4-2

TABLE 5.11  
 DISTRIBUTION OF PROPERTY TAXES  
 ACCORDING TO JURISDICTION

Jurisdiction	1984-1985 Tax Rate *(Per \$1,000.00 Valuation)	Percentage of Total
City of Des Moines	\$15.5671	41.398%
City Assessor	0.2730	0.726%
Des Moines Independent School District	13.0808	34.786%
Polk County	8.2348	21.899%
State of Iowa	0.0101	0.027%
Area XI College	<u>0.4377</u>	<u>1.164%</u>
TOTALS	\$37.6035	100.000%

\*Rounded to four decimal places.

Rep/Dm2/AF5-1

TABLE 5.12  
SUMMARY OF PROPERTY TAX REVENUE LOSSES

Alternative Network	Total Taxable Valuations for Properties Totally Acquired	Total Annual Reduction of Property Tax Revenue*	Jurisdictional Share of Reduction in Tax Revenue**			
			City of Des Moines	Des Moines Independent School District	Polk County	Others
1A	\$12,370,030.00	\$465,160.00	\$192,510.00	\$161,810.00	\$101,860.00	\$8,980.00
2A	10,904,220.00	410,040.00	169,750.00	142,640.00	89,790.00	7,860.00
1B	11,709,240.00	440,310.00	182,280.00	153,170.00	96,420.00	8,440.00
2B	10,243,430.00	385,190.00	159,460.00	133,990.00	84,350.00	7,390.00
Preferred	9,631,700.00	362,190.00	149,940.00	125,990.00	79,320.00	6,940.00

\*Based on Tax Rate of \$37.6035 Per \$1,000.00 of Valuation.  
\*\*Based on Respective Tax Rates Per Jurisdiction.

TABLE 5.13  
ESTIMATED PUBLIC UTILITY ADJUSTMENT COSTS

Alternative Network	Public Utility Adjustments			Total Cost of Utility Adjustments
	Sanitary Sewer Relocation	Water Main* Adjustments	Other Utility Adjustments	
1A	\$135,000.00	\$141,500.00	\$1,289,500.00	\$1,566,000.00
2A	117,000.00	136,500.00	1,262,500.00	1,516,000.00
1B	235,000.00	108,000.00	1,249,000.00	1,592,000.00
2B	217,000.00	103,000.00	1,222,000.00	1,542,000.00
Preferred	217,000.00	103,000.00	1,222,000.00	1,542,000.00

\*Cost estimates provided by staff of Des Moines Water Works.

Rep/Dm2/AF5-2

TABLE 5.14  
ESTIMATED MAINTENANCE COSTS  
FOR THE CBD LOOP ALTERNATIVES

Alternative Network	Miles of Roadway in Network				Total Maintenance Cost Per Year
	Urban Freeway	Urban Primary	City Streets	New Roadways	
A	0.90	2.52	24.95	5.8	\$352,000.00
B	0.90	2.52	25.21	6.4	361,000.00
Preferred	0.90	2.52	25.21	6.0	357,000.00
No Action	0.90	2.52	25.47	0	295,000.00

TABLE 5.15  
ANNUAL ROAD-USER COSTS

Alternative Network	Total Vehicle-Miles Per Day	Annual Road-User Costs			Average Cost Per Vehicle-Mile
		Running Cost	Delay Cost	Total Cost	
A	367,859	\$60,001,000.00	\$ 7,184,400.00	\$67,185,400.00	50.0¢
B	381,755	61,765,300.00	7,733,500.00	69,498,800.00	49.9¢
Preferred	381,755	61,765,300.00	7,733,500.00	69,498,800.00	49.9¢
No Action	373,729	63,228,600.00	16,620,300.00	79,848,900.00	58.5¢

TABLE 5.16  
ANNUAL ACCIDENTS AND COSTS

Alternative Network	Fatality Accidents		Injury Accidents		Property Damage Accidents		Total Annual Cost
	Number	Annual Cost	Number	Annual Cost	Number	Annual Cost	
A	2.7	\$775,400.00	220	\$700,700.00	746	\$387,900.00	\$1,864,000.00
B	2.8	804,100.00	229	729,400.00	779	405,100.00	1,938,600.00
Preferred	2.8	804,100.00	229	729,400.00	779	405,100.00	1,938,600.00
No Action	2.8	804,100.00	244	777,100.00	841	437,300.00	2,018,500.00



TABLE 5.17  
SUMMARY OF ANNUAL ROAD-USER, ACCIDENT  
AND MAINTENANCE COSTS

Alternative Network	Road-User Costs	Accident Costs	Maintenance Costs	Total Annual Costs	Annual Savings Compared to No Action
A	\$67,185,400.00	\$1,864,000.00	\$352,000.00	\$69,401,400.00	\$12,761,000.00
B	69,498,800.00	1,938,600.00	361,000.00	71,798,400.00	10,364,000.00
Preferred	69,498,800.00	1,938,600.00	357,000.00	71,794,400.00	10,368,000.00
No Action	79,848,900.00	2,018,500.00	295,000.00	82,162,400.00	---

TABLE 5.18  
SUMMARY OF IMPACTS TO PARKS AND OPEN SPACES  
FOR PREFERRED ALTERNATIVE

Park	Land Required for R-O-W	Other Impacts	Proposed Measure to Minimize Harm
Sam Cohen Park	.3 Acre	-Visual -Noise	-Moving the Park
Riverside Park	.8 Acre	-Visual -Noise -Connection to River Front Area -Parking and Access to Stadium	-Landscaped Buffer Area -Payment for Land -Design Revisions Adjacent to Stadium
Four River Front Development Areas	1.2 Acres	-Visual -Noise -Trails -Proposed Bike Paths	-Relocation of Bike Path and Trails -Landscaped Buffer Area -Payment for Land
Des Moines Water Works Open Space	12.5 Acres	-Visual -Noise	-Landscaped Buffer Area
Hawthorn Park	None	-Noise -Pedestrian Access	-Landscaped Buffer -Bike/Pedestrian Underpass
Woodland Cemetery	None	-Visual -Pedestrian Access -Relocation of Entrance Gates	-Landscaped Buffer -Reconstruction of Entrance Gates -Landscaping of Entrance Gates

TABLE 5.19

DIRECT IMPACTS TO KEY HISTORIC/ARCHITECTURAL  
STRUCTURES BY THE ALTERNATIVES  
OF THE CBD LOOP ARTERIAL

Structure	Alternative				Preferred Alternative
	1A	2A	1B	2B	
1. 1902 Woodland Avenue (2A.2) Hillside Apartments	X		X		
2. 1440 Locust (2A.18) Mitchell Transmission (Formerly Apperson Iowa Motor Company)	X	X			
3. 2015 Grand Avenue (3.9) Green International Office Building (Formerly Great Western Insurance Company)	X	X	X	X	
4. 113 S.W. Eighth (5.13) Ladin Industries (Formerly Capital City Woolen Mills)	X	X	X	X	X
5. 1218 Indianola Avenue Clifton Heights United Presbyterian Church (7.14)	X	X	X	X	X
6. Contributing Structures to Sherman Hill Historic District	31	27	31	27	23

X - Indicates that the structure would be within the right-of-way of the alternative.

Rep/Dm2/AF5-5

TABLE 5.20

## NOISE ABATEMENT CRITERIA/ACTIVITY RELATIONSHIPS

Activity Category	Design Noise Levels - dBA*		Description of Activity Category
	$L_{eq}(h)$	$L_{10}(h)$	
A**	57 (Exterior)	60 (Exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheatres, particular parks or portions of parks, open spaces, or historic districts which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B**	67 (Exterior)	70 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, and parks which are not included in Category A, and residences, motels, hotels, public meeting rooms, schools, churches, libraries and hospitals.
C	72 (Exterior)	75 (Exterior)	Developed lands, properties or activities not included in Categories A or B above.
D	---	---	For requirements on undeveloped lands, see Paragraphs 11a and c.
E	52 (Interior)	55 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

\*Either  $L_{10}$  or  $L_{eq}$  (but not both) design noise levels may be used on a project.

\*\*Parks in Categories A and B include all such lands (public or private) which are actually used as parks.

TABLE 5.21

## SUMMARY OF NOISE ANALYSIS

Site	Description	Existing	No Action	1A	1B	2A	2B	Preferred Alternative	Impact** Rating	Proposed Abatement Measure	Reason For No Abatement
1	St. Ambrose Catholic Cemetery	63	63	63	63	63	63	63	Moderate	---	Minor Benefit <sup>1</sup>
2	Church - 19th and Crocker Streets	49*	50*	50*	50*	50*	50*	50*	Moderate	---	Not Effective <sup>2</sup>
3	Edmunds School	45*	45*	45*	45*	45*	45*	45*	Minor	---	Minor Impact
4	Woodland Cemetery	64	64	65	65	65	65	65	Moderate	---	Minor Benefit <sup>1</sup>
5	19 Residences - Center Street	64	65	66	66	66	66	66	Moderate	Noise Wall	---
6	Woodland Cemetery	64	64	63	63	63	63	67	Moderate	---	Minor Benefit <sup>1</sup>
7	Tech High School Track	67	67	67	68	63	63	68	Serious	---	Minor Benefit <sup>1</sup>
8	Chamberlain Park	65	65	68	69	64	65	65	Moderate	---	Aesthetics
9	Commercial Area	62	62	67	67	67	67	67	Moderate	---	Not Effective <sup>2</sup>
10	Des Moines Tech High School	55*	55*	50*	50*	50*	50*	50*	Moderate	---	Not Effective <sup>2</sup>
11	Des Moines Water Works	62	62	68	68	68	68	70	Serious	---	Cost
12	Des Moines Water Works	60	60	65	65	65	65	67	Moderate	---	Cost
13	Flood Levee - Near Raccoon River	48	48	48	48	48	48	48	None	---	No Impact
14	Riverside Park	66	66	69	69	69	69	69	Serious	---	Cost
15	North Bank - Raccoon River	48	48	65	65	65	65	65	Serious	---	Minor Benefit <sup>1</sup>
16	South Bank - Raccoon River	48	48	67	67	67	67	67	Serious	---	Not Effective <sup>2</sup>
17	Church - Indianola Avenue	47*	48*	48*	48*	48*	48*	48*	Moderate	---	Not Effective <sup>2</sup>
18	4 Residences - S.W. First Street	63	63	67	67	67	67	67	Moderate	---	Not Effective <sup>2</sup>
19	East Levee - Des Moines River	45	45	67	67	67	67	67	Serious	---	Minor Benefit <sup>1</sup>
20	Church - S.E. 4th Street	35*	35*	40*	40*	40*	40*	40*	Moderate	---	Minor Benefit <sup>1</sup>
21	Allen Park	66	66	69	69	69	69	69	Serious	---	Aesthetics
22	Church - Allen Street	36*	36*	43*	43*	43*	43*	43*	Moderate	---	Minor Benefit <sup>1</sup>
23	Church - Scott Avenue	43*	43*	47*	47*	47*	47*	47*	Moderate	---	Minor Benefit <sup>1</sup>
24	Sam Cohen Park	62	62	68	68	68	68	68	Serious	---	Not Effective <sup>2</sup>
25	Church - S.E. 14th Street	44*	45*	49*	49*	49*	49*	49*	Moderate	---	Minor Benefit <sup>1</sup>
26	Church - E. 15th Street	39*	41*	45*	45*	45*	45*	45*	Moderate	---	Not Effective <sup>2</sup>
27	4 Residences - near E. Vine Street	68	70	66	66	66	66	66	Moderate	---	Not Effective <sup>2</sup>
28	Church - S.E. 15th Street	38*	39*	48*	48*	48*	48*	48*	Moderate	---	Displaced
29	Church - S.E. 14th Court	41*	43*	52*	52*	52*	52*	52*	Serious	---	Displaced
30	1 Residence - S.E. 14th Court	60	62	66	66	66	66	66	Moderate	---	Not Effective <sup>2</sup>
31	Hawthorn Park	67	68	69	69	69	69	69	Serious	---	Most Park Activity is Far From Roadway <sup>2</sup>
32	4 Residences - 20th Street	65	66	68	68	68	68	68	Serious	---	Not Effective <sup>2</sup>
33	3 Residences - 19th Street	67	69	70	70	70	70	70	Serious	---	Displaced
34	5 Residences - Leyner Street	64	64	66	66	66	66	66	Moderate	---	Cost
35	23 Residences - Pleasant Street	64	64	65	65	65	65	68	Serious	Noise Wall	---
36	18 Residences - 19th Street	60	61	64	65	58	58	58	Minor	---	Minor Impact
37	Industrial Area - Elm Street	67	67	68	68	68	68	68	Moderate	---	Minor Benefit <sup>1</sup>
38	4 Residences - S.W. Second Street	53	53	61	61	61	61	61	Moderate	---	Not Effective <sup>2</sup>
39	4 Residences - South of Indianola Avenue	51	52	55	55	55	55	55	Minor	---	Minor Impact
40	3 Residences - S.E. Second Street	53	53	61	61	61	61	61	Moderate	---	Cost
41	Industrial Area - S.E. Fifth Street	54	54	64	64	64	64	64	Moderate	---	Minor Benefit <sup>1</sup>
42	1 Residence - S.E. Fifth Street	57	57	61	61	61	61	61	Moderate	---	Cost
43	2 Residences - S.E. 10th Street	57	57	66	66	66	66	66	Moderate	---	Cost
44	2 Residences - Scott Avenue	61	62	64	64	64	64	64	Moderate	---	Cost
45	Commercial Area - S.E. 14th Street	71	72	70	70	70	70	70	Moderate	---	Not Effective <sup>2</sup>
46	4 Residences - S.E. 14th Court	64	66	68	68	68	68	68	Serious	---	Not Effective <sup>2</sup>
47	8 Residences - E. Vine Street	67	69	67	67	67	67	67	Serious	---	Not Effective <sup>2</sup>
48	3 Residences - E. 15th Street	62	63	69	69	69	69	69	Serious	---	Not Effective <sup>2</sup>
49	6 Residences - E. Court Avenue	68	69	69	69	69	69	69	Serious	---	Not Effective <sup>2</sup>

All Noise Levels are in dBA, Leq(h).

\*Interior Noise Level (Category E)

\*\*See Table 5.5 for Impact Rating Scale.

1 - Limited usage does not justify the cost of noise abatement.

2 - Not effective in reducing noise levels significantly (by 8 decibels or more).

TABLE 5.22  
NOISE BARRIER SUMMARY

Nearest Site	Description/ Existing Noise Level	Unshielded Noise Level/ Impact Rating	Barrier Length	Barrier Height	Noise Reduction/ No. of Homes Affected	Barrier Type	Barrier Cost	Cost/Home
31	Hawthorn Park 67 dBA	69/ Serious	850'	10'	10 dBA/ ---	Wall Berm Evergreen	\$85,000 \$34,000 \$170,000	--- --- ---
47	E. 14th and Vine Street 64 dBA	64-66/ Moderate	1,100'	14'	3-5 dBA/ 8 Homes	Wall	\$154,000	\$19,250
27	E. 15th-North of Court Avenue 66 dBA	66-68/ Mod-Serious	450'	6'	1 dBA/ 4 Homes	Wall	\$27,000	\$6,750
24	Sam Cohen Park 61 dBA	66/ Moderate	550'	12'	4 dBA/ ---	Wall	\$55,000	---
18	Dunham Street 58 dBA	63/ Moderate	400'	14'	3-6 dBA/ 4 Homes	Wall	\$56,000	\$14,000
16	Jackson Street 48 dBA	56-59/ Moderate	500'	10'	2-4 dBA/ 14 Homes	Wall Berm	\$50,000 \$170,000 (\$150,000 ROW)	\$3,571 \$12,143
32	20th Street - North of Cottage Grove 65 dBA	66/ Moderate	250'	12'	3-5 dBA/ 4 Homes	Wall	\$30,000	\$7,500
35	20th Street - South of Cottage Grove 64 dBA	65-68/ Mod-Serious	2,000'	10'	4-6 dBA/ 23 Homes	Wall Berm Evergreen	\$200,000 \$380,000 (\$300,000 ROW) \$400,000	\$8,696 \$16,522 \$17,391
				16'	5-8 dBA/ 23 Homes	Wall Evergreen	\$320,000 \$640,000	\$13,913 \$27,826

5.90



TABLE 5.23

## PREDICTED 1-HOUR CO CONCENTRATIONS (PPM)

Site	Description	1A	2A	1B	2B	Preferred Alternative	No Action	Ex.
3	Edmunds School	2	2	2	2	2	2	2
7	Tech High School Track	3	3	3	3	3	3	3
8	Chamberlain Park	3	4	5	5	4	3	3
9	Commercial Area	3	3	3	3	3	4	4
10	Des Moines Tech High School	3	4	4	4	4	5	7
11	Des Moines Water Works	4	4	5	6	7	5	6
13	Flood Levee - Near Raccoon River	2	3	2	3	3	4	5
14	Riverside Park	6	6	6	6	6	4	5
16	South Bank - Raccoon River	4	4	4	4	4	3	3
18	Residence - S.W. First Street	5	5	5	5	5	4	4
25	Church - S.E. 14th Street	4	4	4	4	4	4	5
34	Residence - Leyner Street	2	2	2	2	2	2	2
35	Residence - Pleasant Street	3	3	3	3	3	3	3
36	Residence - 19th Street	3	3	3	3	3	3	2
37	Industrial Area - Elm Street	5	5	5	5	5	4	4
39	Residence - South of Indianola Avenue	3	3	3	3	3	3	3
42	Residence - S.E. Fifth Street	7	7	7	7	7	3	3
43	Residence - S.E. 10th Street	6	6	6	6	6	3	4
44	Residence - Scott Avenue	5	5	5	5	5	5	7
45	Commercial Area - S.E. 14th Street	7	7	7	7	7	12	16
46	Residence - S.E. 14th Court	5	5	5	5	5	6	7
49	Residence - E. Court Avenue	5	5	5	5	5	5	7

TABLE 5.24

## PREDICTED 8-HOUR CO CONCENTRATIONS (PPM)

Site	Description	1A	2A	1B	2B	Preferred Alternative	No Action	Ex.
3	Edmunds School	2	2	2	2	2	2	2
7	Tech High School Track	2	2	2	2	2	2	2
8	Chamberlain Park	2	3	3	3	3	2	2
9	Commercial Area	2	2	2	2	2	3	3
10	Des Moines Tech High School	2	3	3	3	3	3	4
11	Des Moines Water Works	3	3	3	3	4	3	3
13	Flood Levee - Near Raccoon River	2	2	2	2	2	3	3
14	Riverside Park	3	3	3	3	3	3	3
16	South Bank - Raccoon River	3	3	3	3	3	2	2
18	Residence - S.W. First Street	3	3	3	3	3	3	3
25	Church - S.E. 14th Street	3	3	3	3	3	3	3
34	Residence - Leyner Street	2	2	2	2	2	2	2
35	Residence - Pleasant Street	2	2	2	2	2	2	2
36	Residence - 19th Street	2	2	2	2	2	2	2
37	Industrial Area - Elm Street	3	3	3	3	3	3	3
39	Residence - South of Indianola Avenue	2	2	2	2	2	2	2
42	Residence - S.E. Fifth Street	4	4	4	4	4	2	2
43	Residence - S.E. 10th Street	3	3	3	3	3	2	3
44	Residence - Scott Avenue	3	3	3	3	3	3	4
45	Commercial Area - S.E. 14th Street	4	4	4	4	4	5	7
46	Residence - S.E. 14th Court	3	3	3	3	3	3	4
49	Residence - E. Court Avenue	3	3	3	3	3	3	4

Rep/Dm2/AF9-1

TABLE 5.25  
PROJECTED FUEL CONSUMPTION

Alternative System	Vehicle-Miles Per Day	Total Annual Fuel Consumption (Million Gallons)
No Action	373,729	12.64
Alternative A	367,859	10.73
Alternative B	381,755	11.21
Preferred Alternative	381,755	11.21

TABLE 5.26  
SUMMARY OF MAJOR ADVERSE IMPACTS OF  
CBD LOOP ALTERNATIVES

Parameter	Alternatives				
	1A	2A	1B	2B	Preferred
Estimated Number of People Displaced	592	514	564	486	466
Housing Units Displaced	244	219	221	196	181
Single-Family Dwellings Displaced	80	75	80	75	71
Businesses Displaced	63	55	56	48	41
Churches Displaced	5	5	5	5	5
Historic Structures Displaced	3	3	3	3	2
Parks Where Right-of-Way for Project is Required	3	2	3	2	2

Rep/Dm2/AF9-2

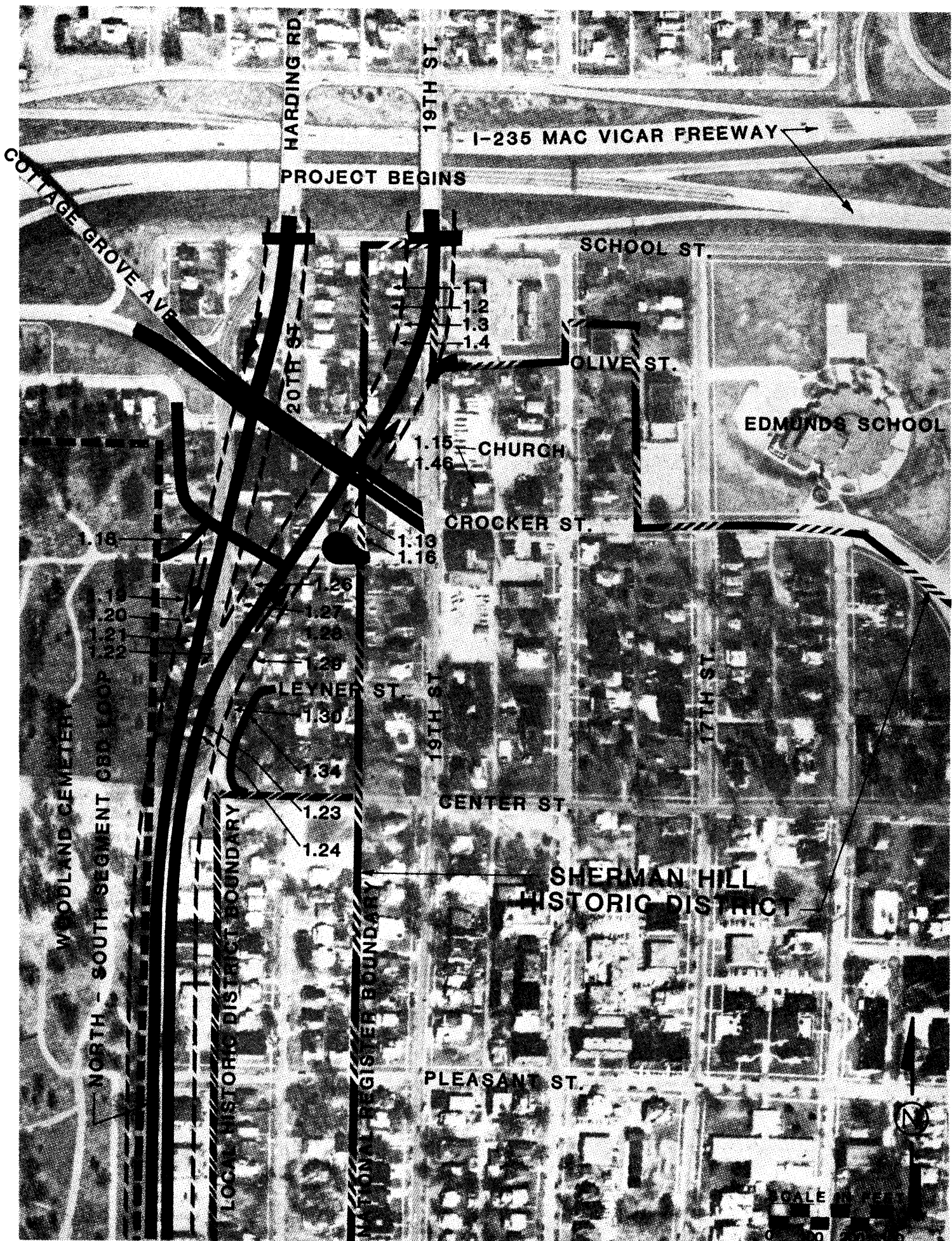


PLATE 2 PREFERRED ALTERNATIVE NORTH-SOUTH SEGMENT



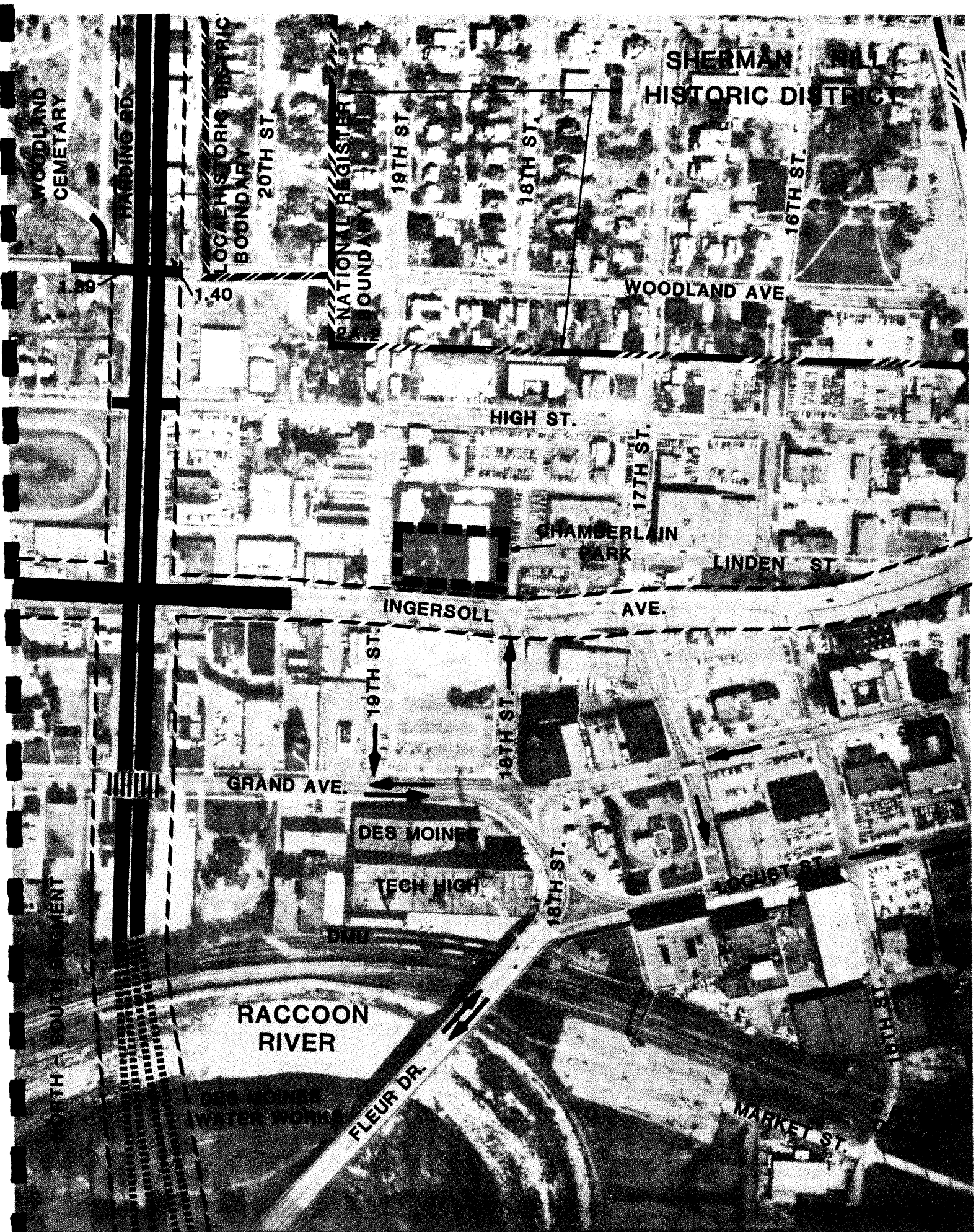


PLATE 3 PREFERRED ALTERNATIVE NORTH-SOUTH SEGMENT



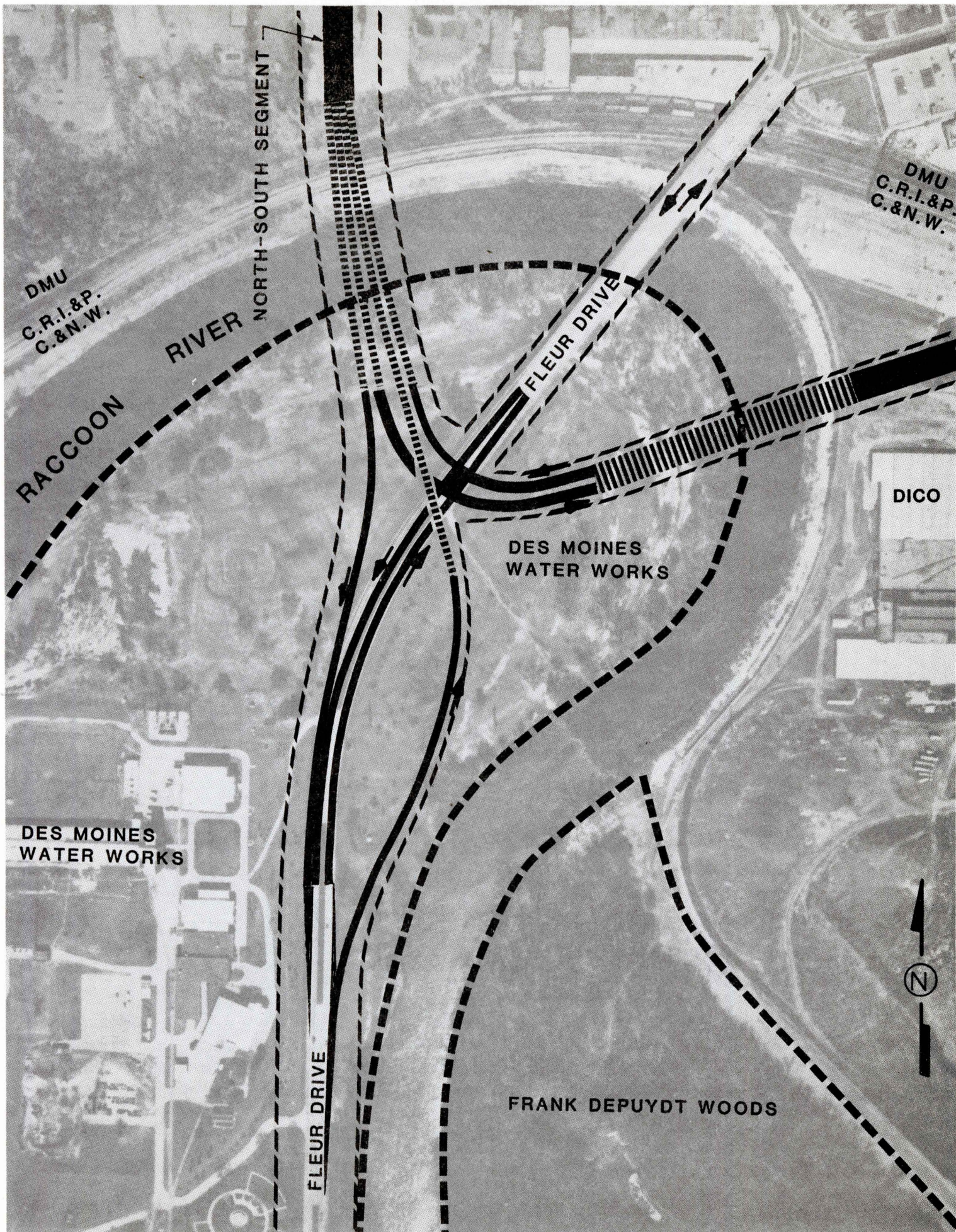


PLATE 4 PREFERRED ALTERNATIVE  
DES MOINES WATER WORKS AREA



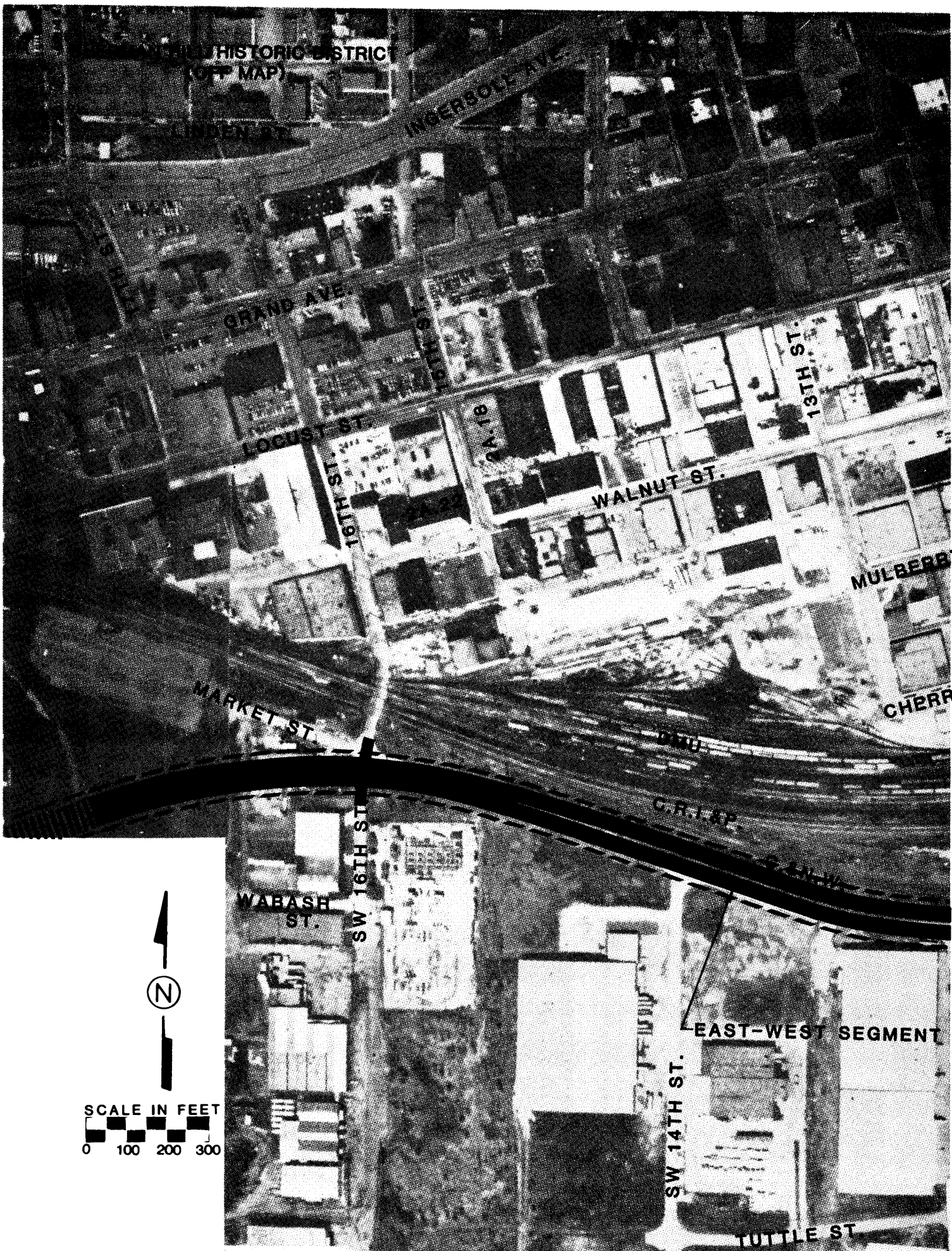


PLATE 5 PREFERRED ALTERNATIVE EAST-WEST SEGMENT



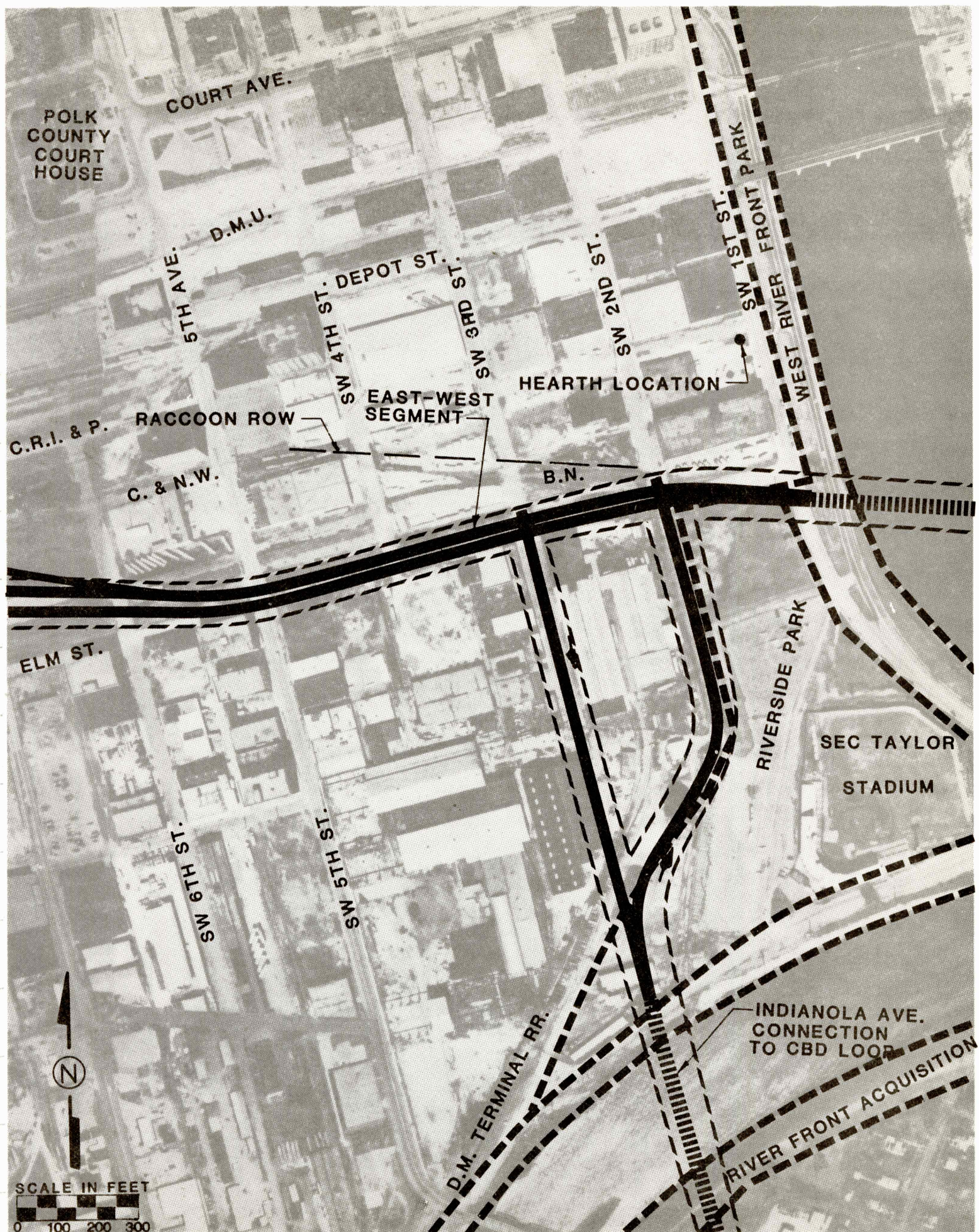


SCALE IN FEET  
0 100 200 300

EAST-WEST SEGMENT

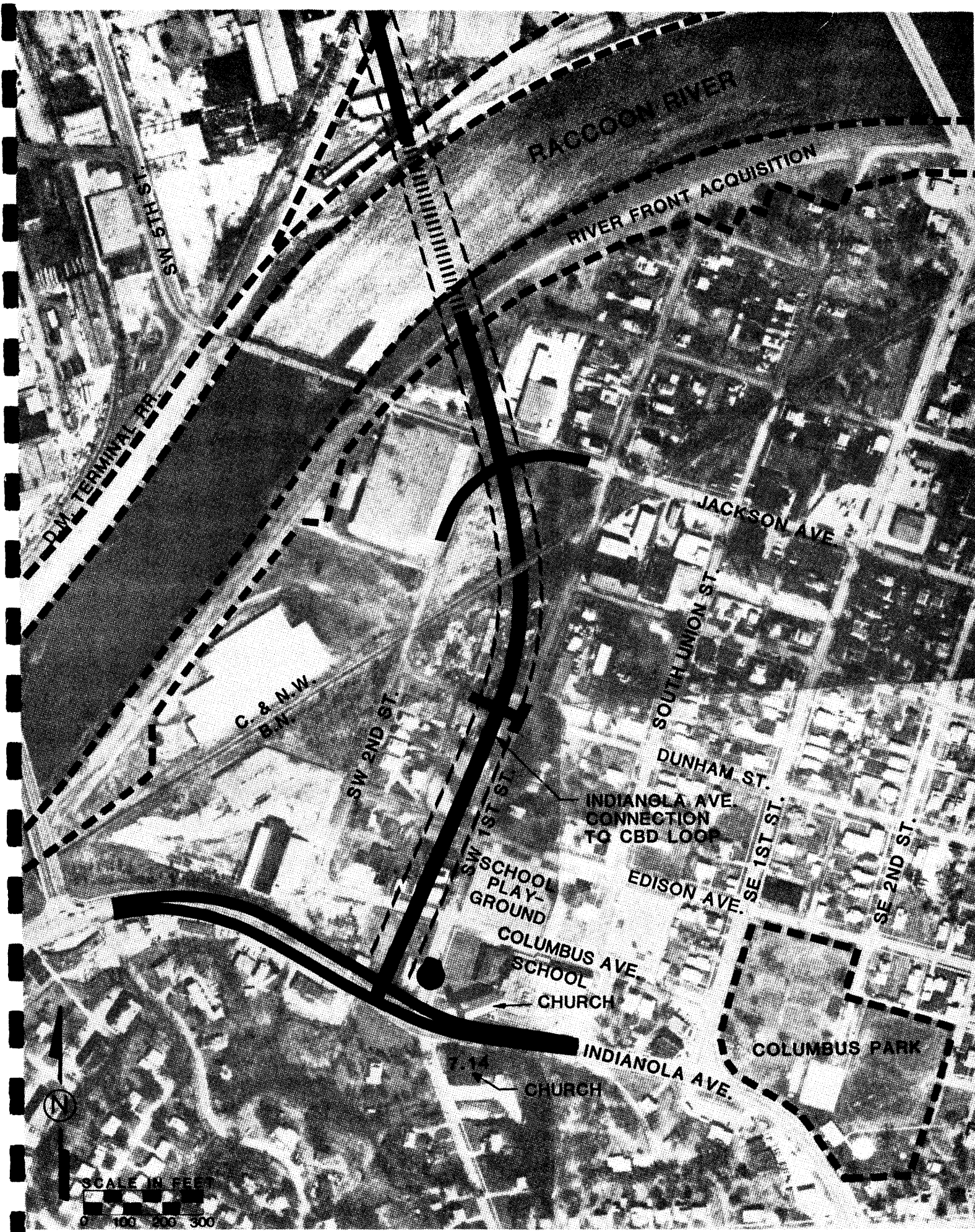
PLATE 6 PREFERRED ALTERNATIVE EAST-WEST SEGMENT





**PLATE 7 PREFERRED ALTERNATIVE EAST-WEST SEGMENT AND INDIANOLA AVE. CONNECTION**





SW 3RD ST.  
 SW 2ND ST.  
 SW 1ST ST.  
 RIVER FRONT ACQUISITION  
 D.M. TERMINAL RR.

RACCOON RIVER

C. & N.W.  
 B.N.

SW 2ND ST.

SW 1ST ST.

INDIANOLA AVE.  
 CONNECTION  
 TO CBD LOOP

SOUTH UNION ST.

DUNHAM ST.

EDISON AVE.

SE 1ST ST.

SE 2ND ST.

JACKSON AVE.

SCHOOL  
 PLAY-  
 GROUND

COLUMBUS AVE.  
 SCHOOL

CHURCH

INDIANOLA AVE.

CHURCH

COLUMBUS PARK



PLATE 8 PREFERRED ALTERNATIVE - INDIANOLA AVE. CONNECTION



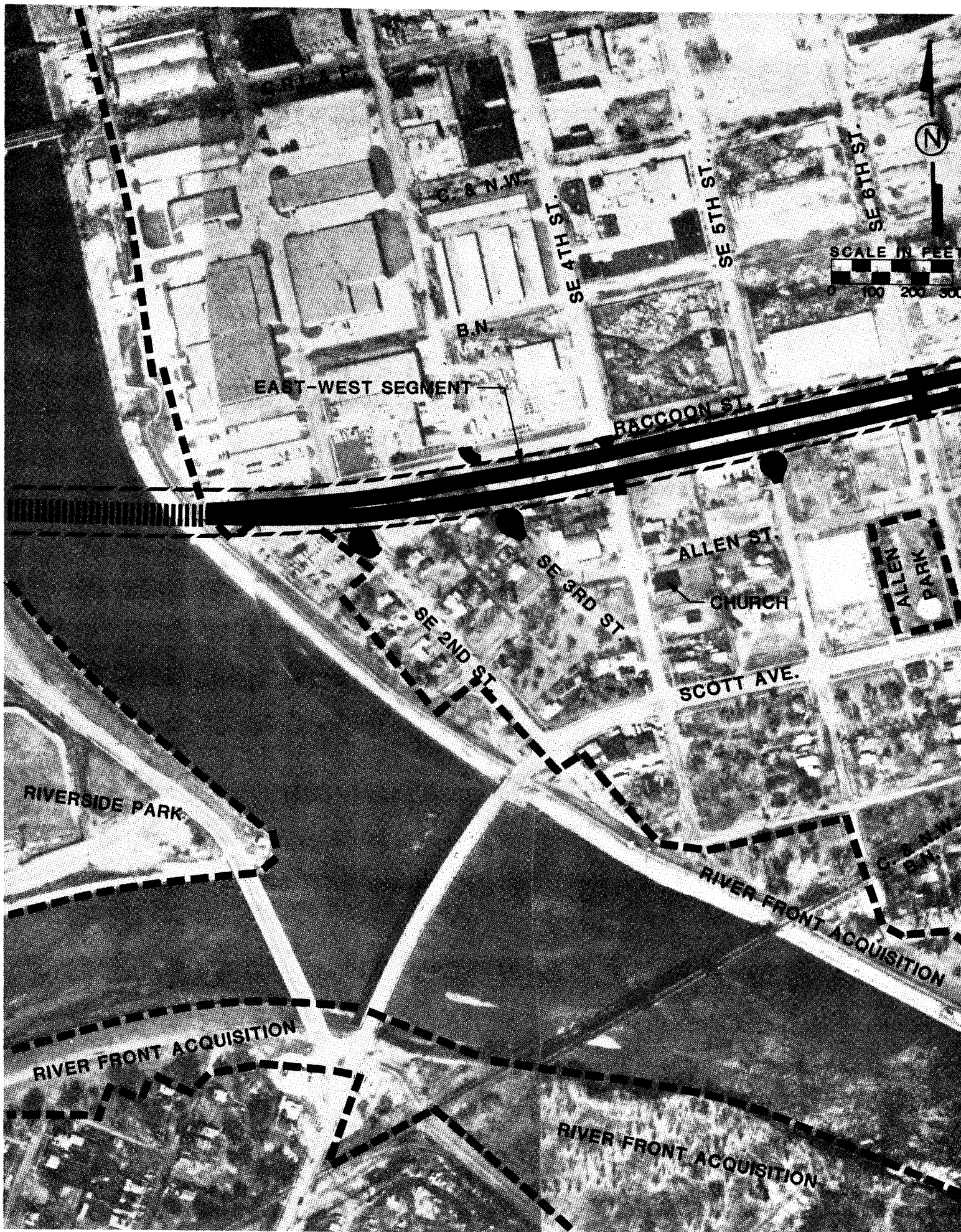


PLATE 9 PREFERRED ALTERNATIVE EAST-WEST SEGMENT



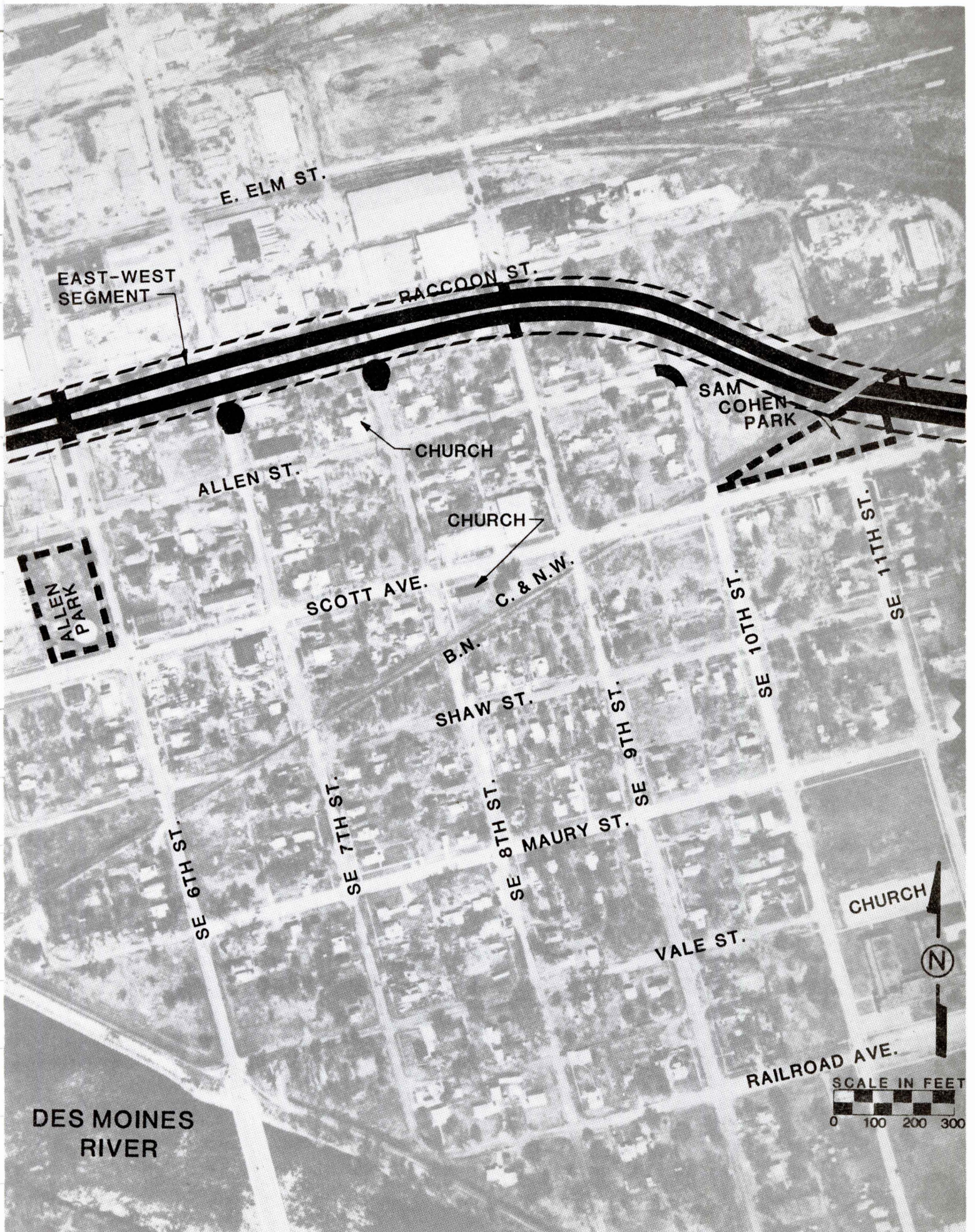
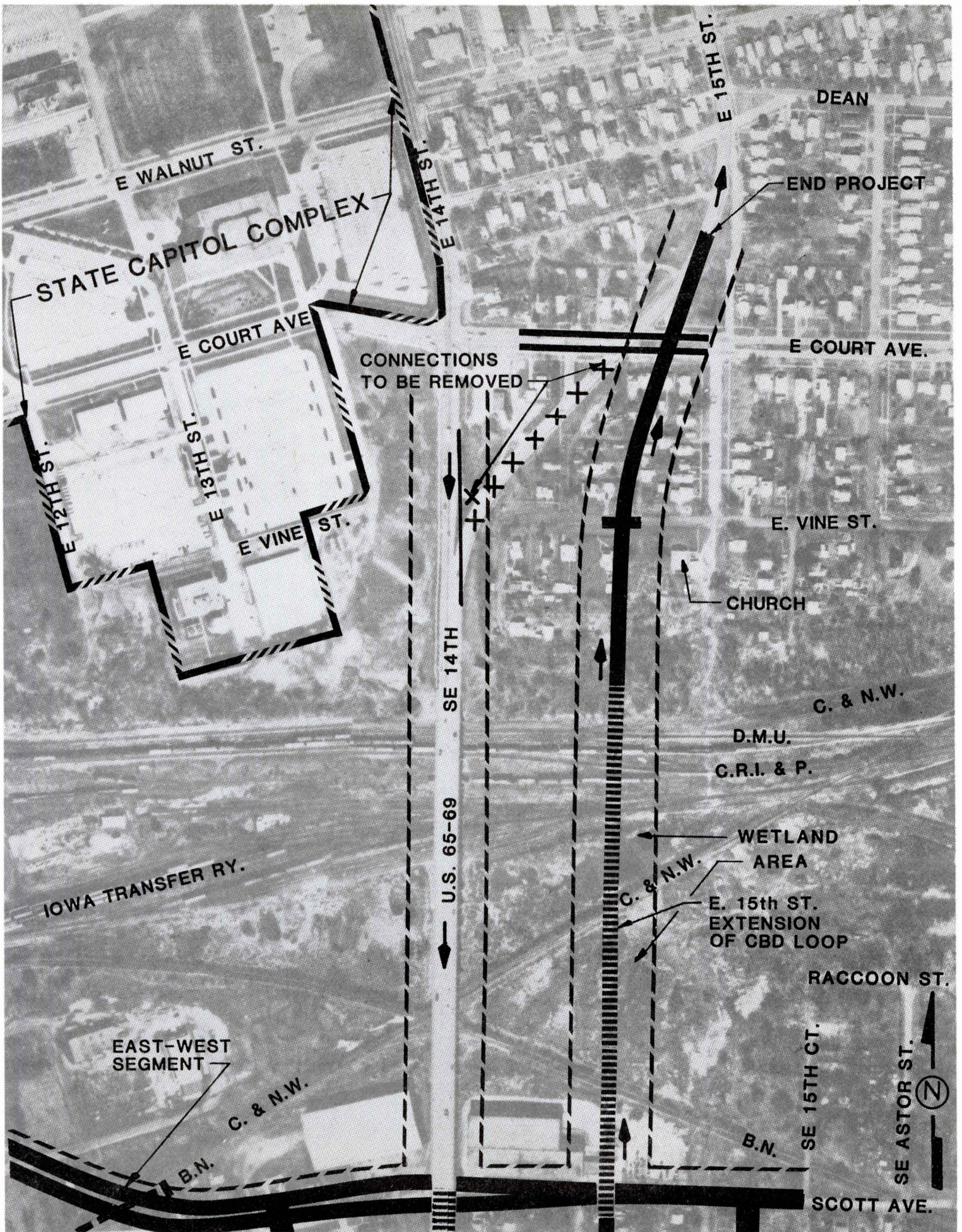


PLATE 10 PREFERRED ALTERNATIVE EAST-WEST SEGMENT





**PLATE 11 PREFERRED ALTERNATIVE EAST-WEST SEGMENT AND E. 15TH. ST. EXTENSION**



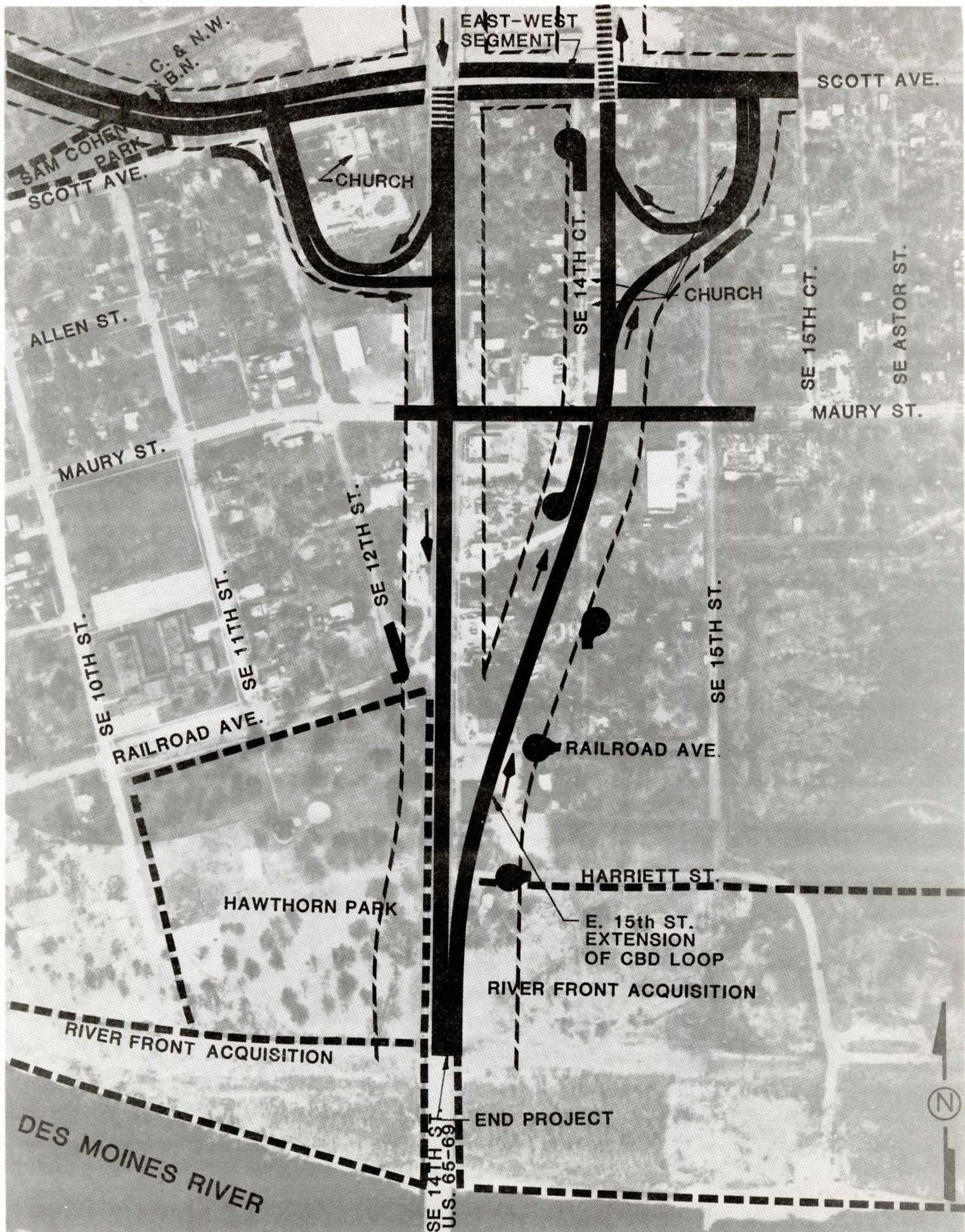











PLATE 12 PREFERRED ALTERNATIVE EAST-WEST SEGMENT AND E. 15TH ST. EXTENSION



**APPENDIX D**

## LEGEND

	ROADWAY ON BRIDGE STRUCTURE
	ROADWAY NEAR GROUND LEVEL
	ROADWAY BELOW GROUND LEVEL
	PARK BOUNDARIES
	GENERIZED 67dBA NOISE CONTOUR LINES
	RAILROAD RELOCATION
	STREET CONNECTION OR RELOCATION
	STREET TURN AROUND
	DIRECTION OF TRAFFIC FLOW

SCALE: 1"= APPROX. 300'

NOTE: THE ABOVE SYMBOLS REPRESENT APPROXIMATE  
LOCATIONS ON THE FOLLOWING AERIAL PHOTOGRAPHS  
AND ARE NOT TO SCALE







PLATE 2 SUBALTERNATIVES 2A & 2B



SHERMAN HILL  
HISTORIC DISTRICT

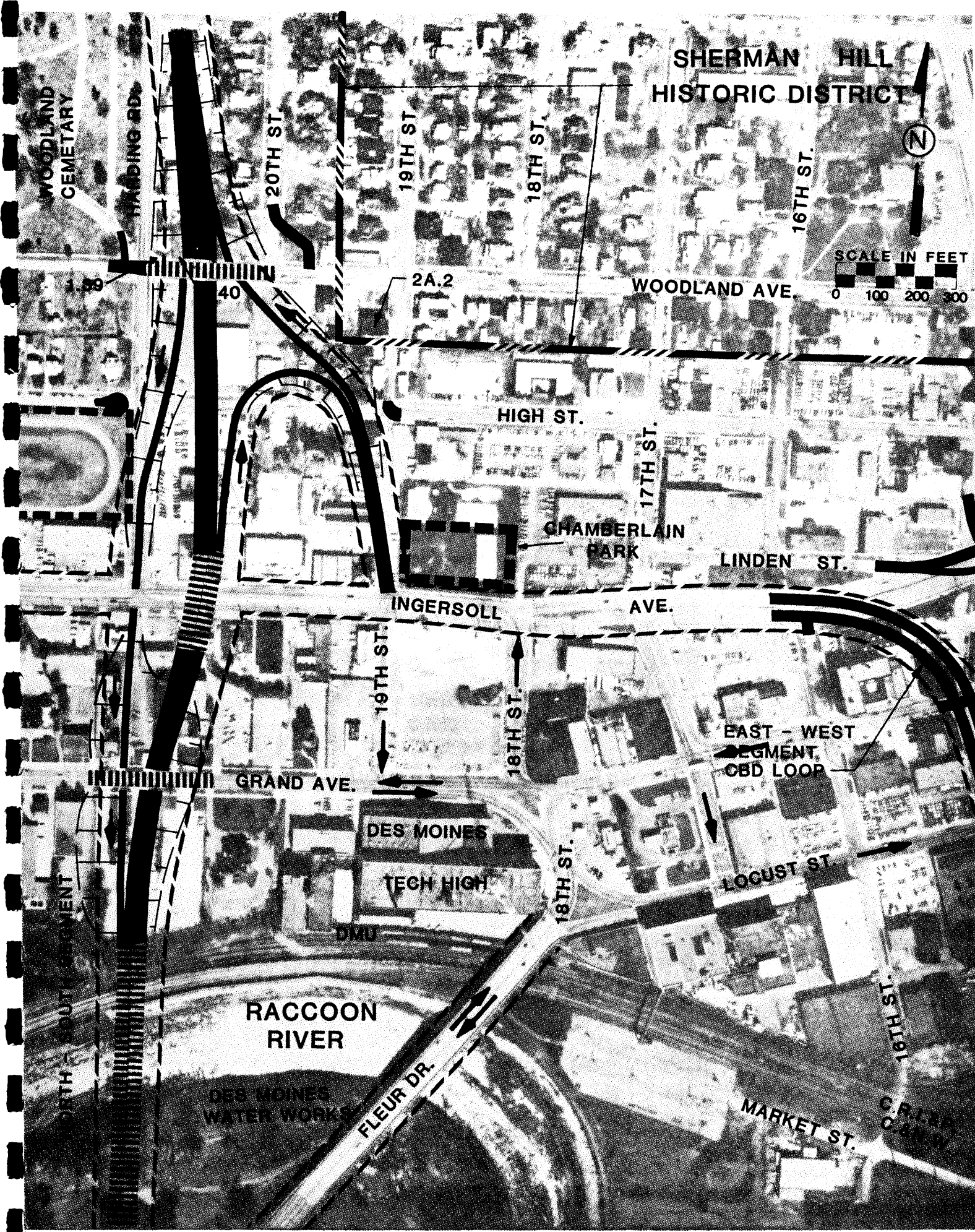


PLATE 3 SUBALTERNATIVE 1A

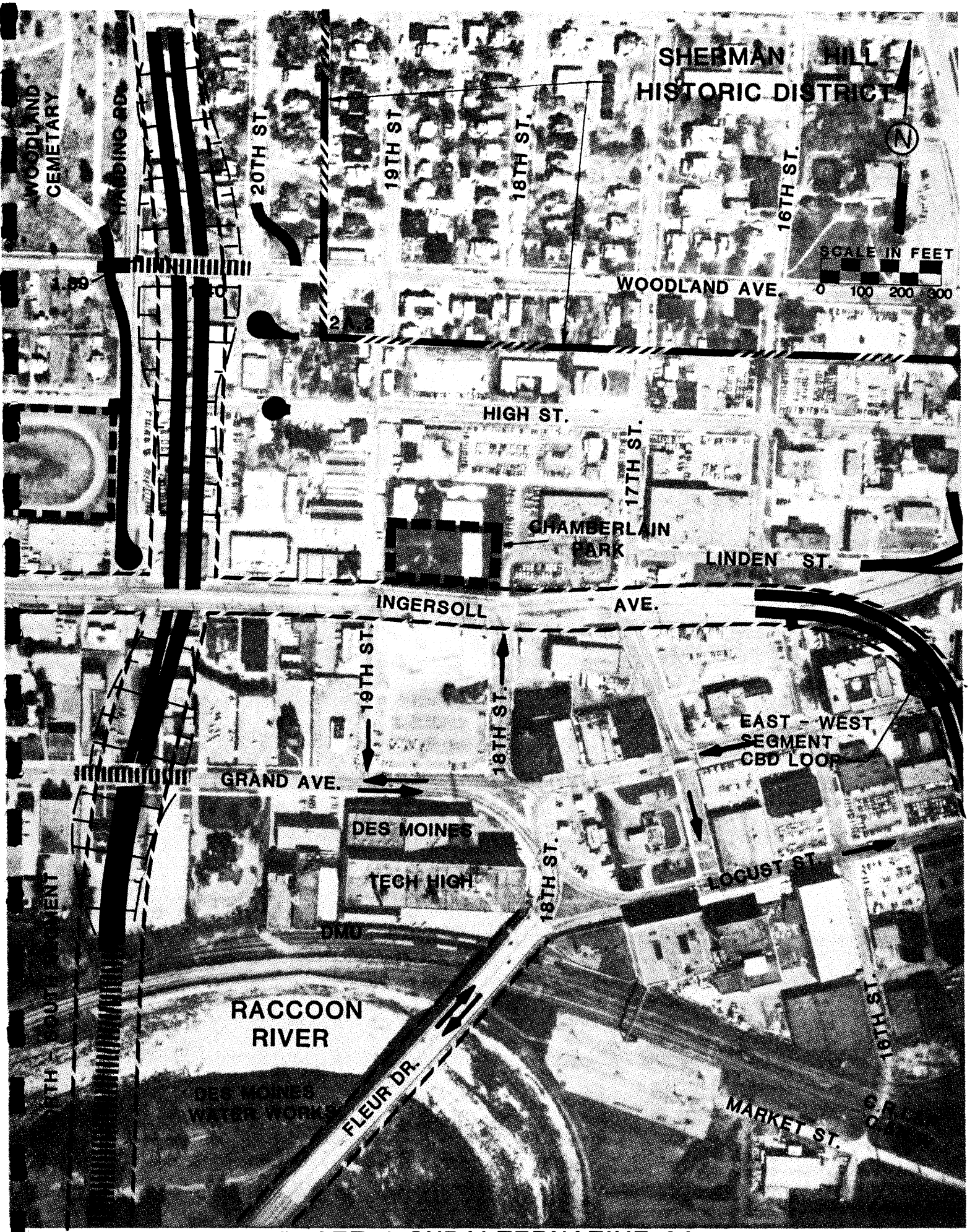
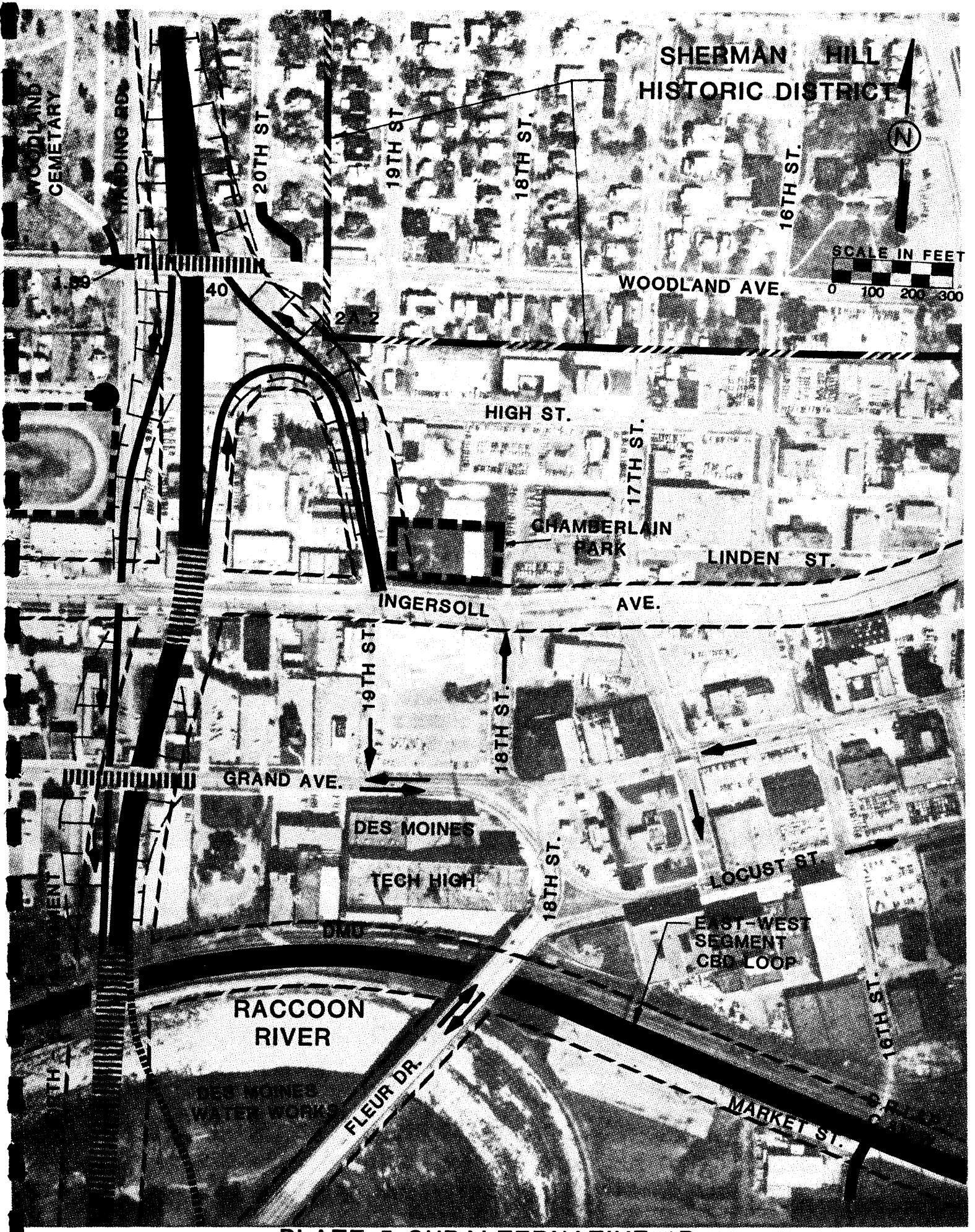


PLATE 4 SUBALTERNATIVE 2A





SHERMAN HILL  
HISTORIC DISTRICT

SCALE IN FEET  
0 100 200 300

RACCOON RIVER

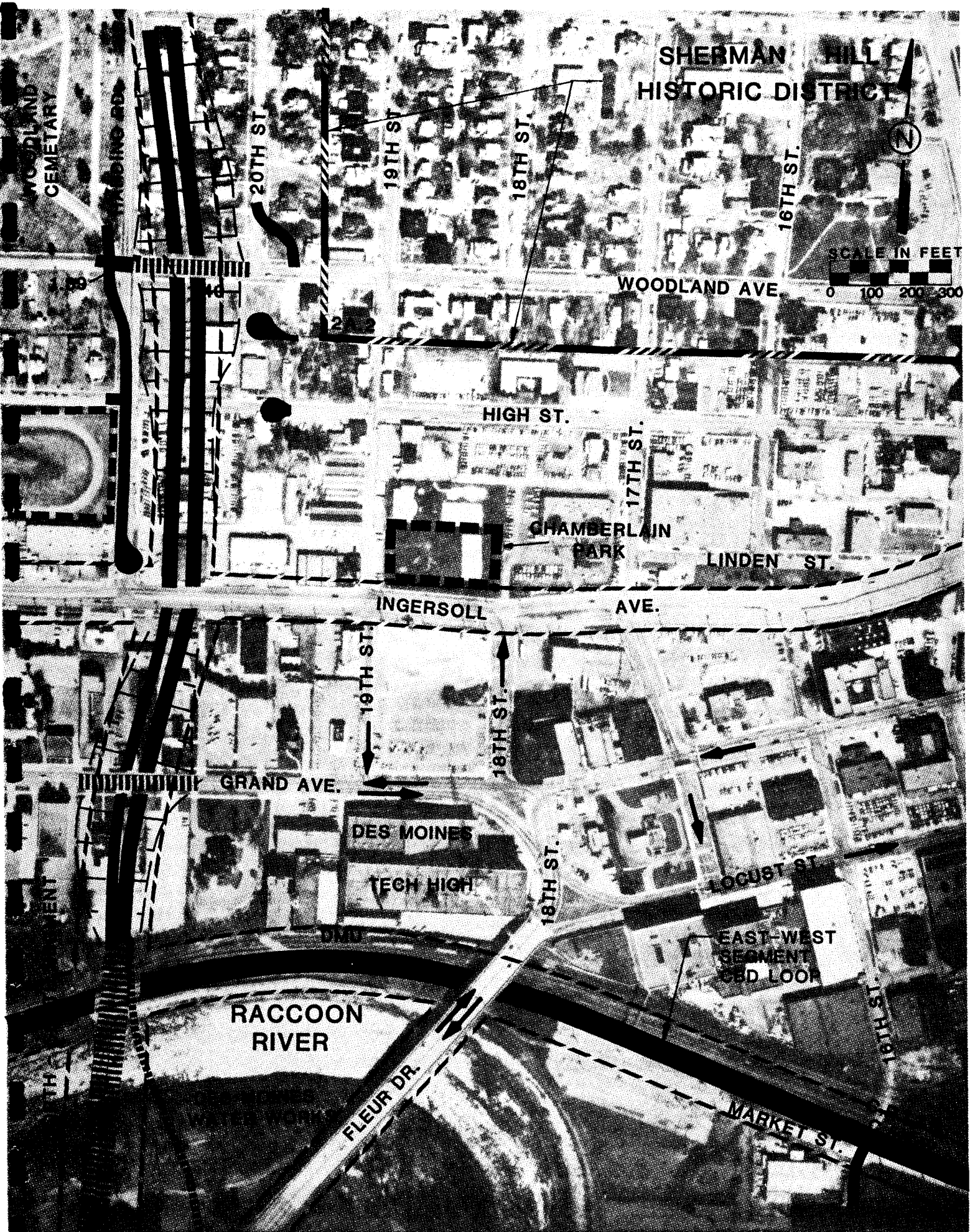
DES MOINES WATER WORKS

DES MOINES  
TECH HIGH

EAST-WEST  
SEGMENT  
CBD LOOP

PLATE 5 SUBALTERNATIVE 1B





SHERMAN HILL  
HISTORIC DISTRICT



SCALE IN FEET  
0 100 200 300

WOODLAND  
CEMETARY

TRADING RD.

20TH ST.

19TH ST.

18TH ST.

16TH ST.

WOODLAND AVE

HIGH ST.

17TH ST.

CHAMBERLAIN  
PARK

LINDEN ST.

INGERSOLL  
AVE.

19TH ST.

18TH ST.

GRAND AVE.

DES MOINES

TECH HIGH

18TH ST.

LOCUST ST.

EAST-WEST  
SEGMENT  
CBD LOOP

RACCOON  
RIVER

FLEUR DR.

MARKET ST.

15TH ST.

PLATE 6 SUBALTERNATIVE 2B



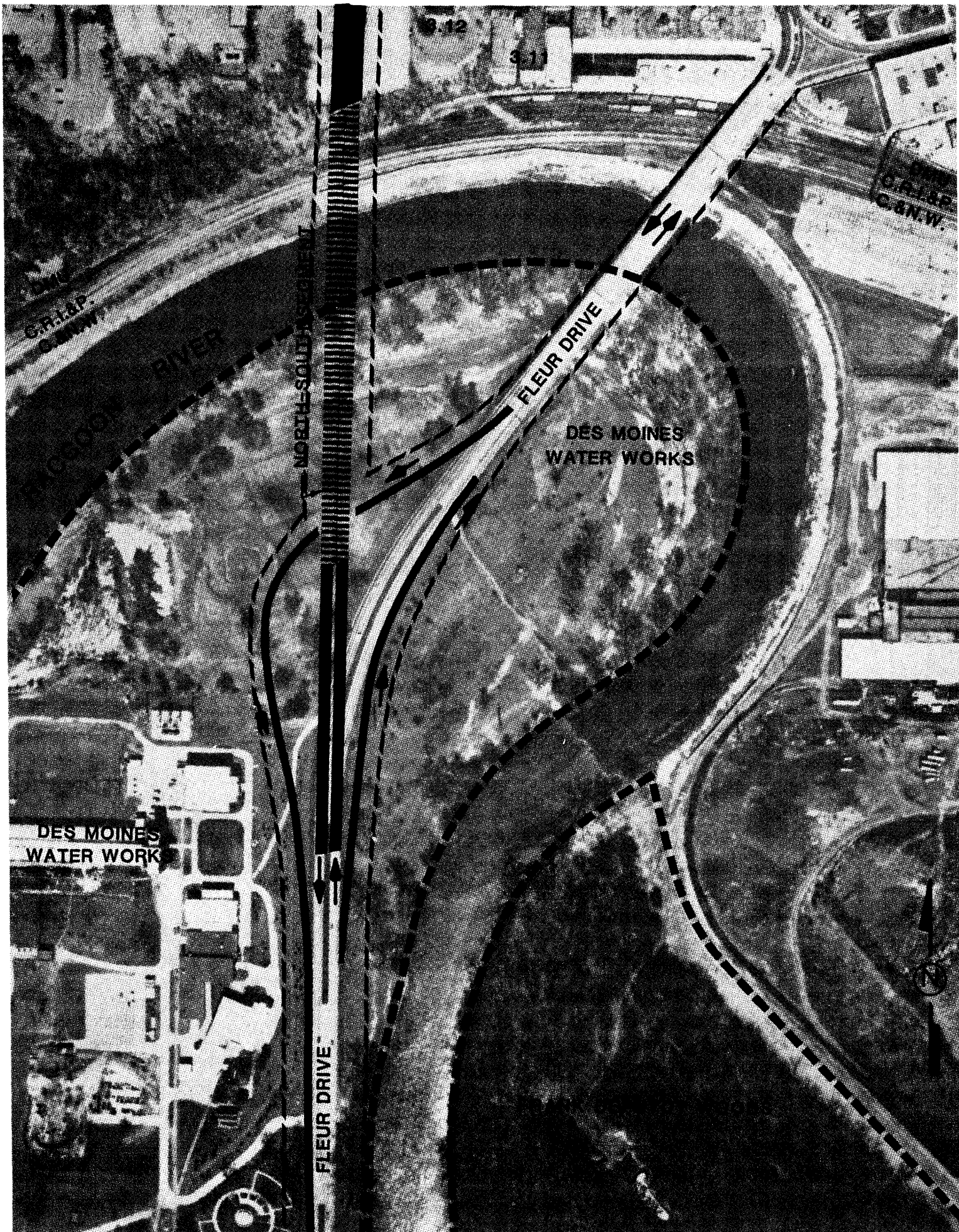


PLATE 7 SUBALTERNATIVES 1A & 2A



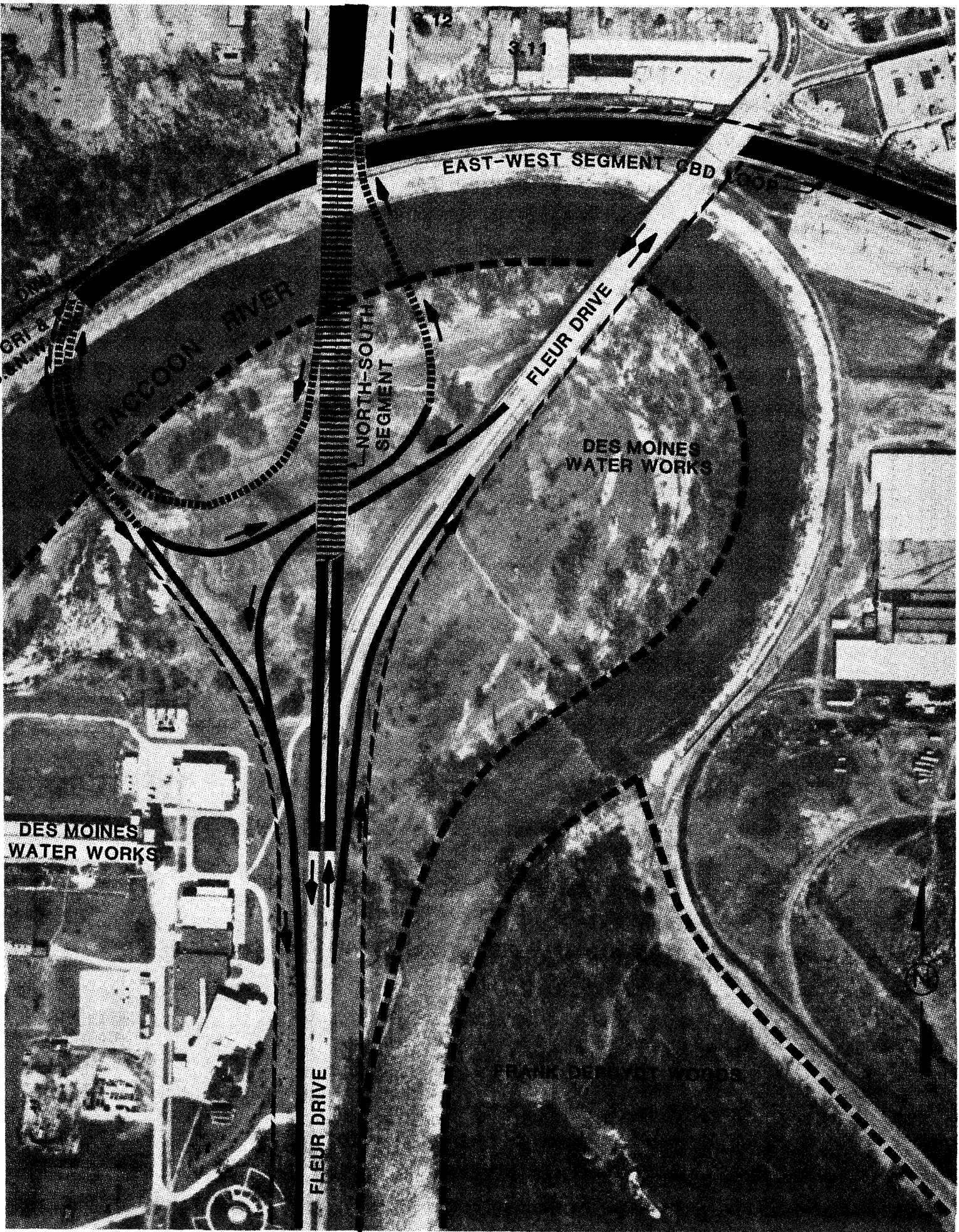


PLATE 8 SUBALTERNATIVES 1B & 2B

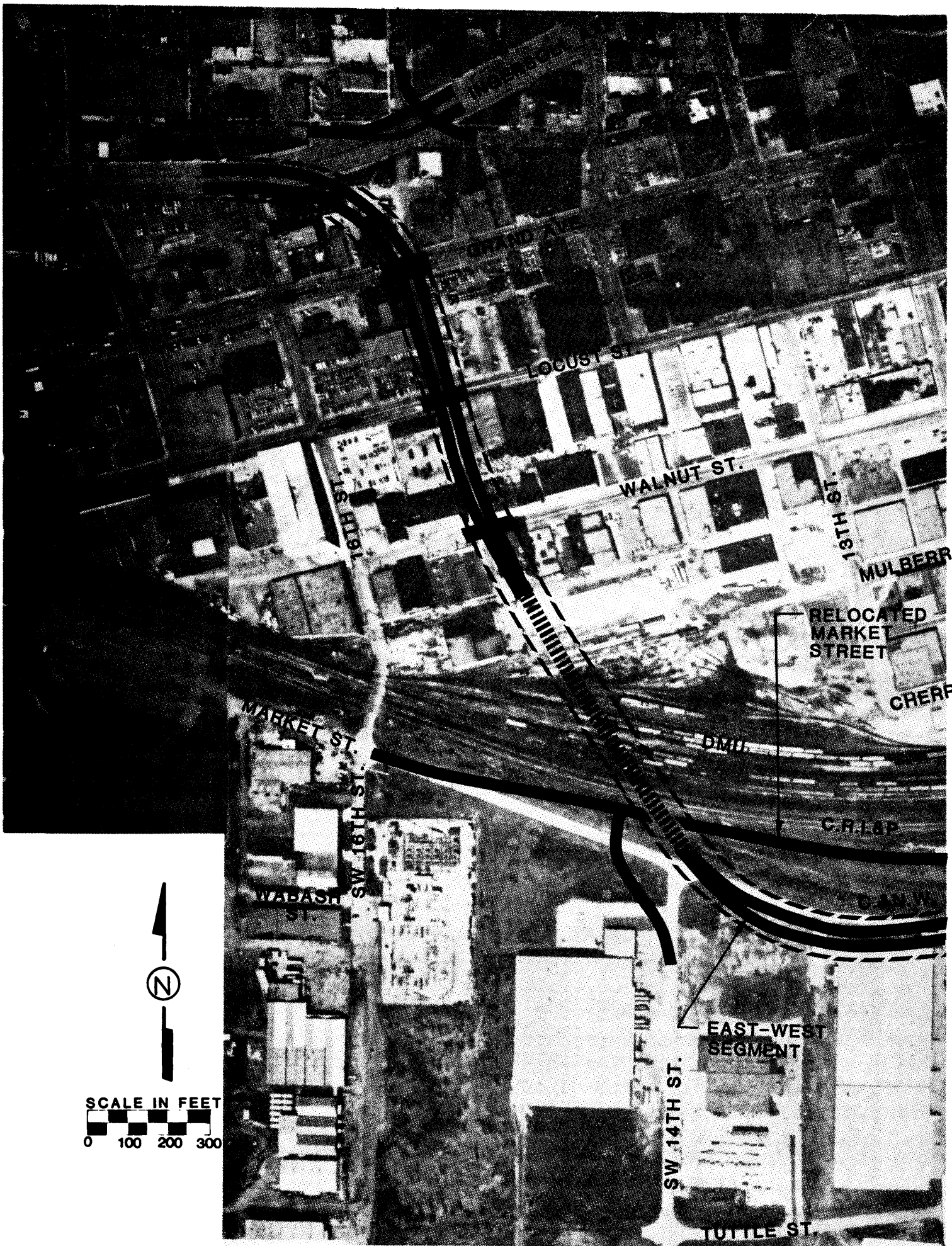


PLATE 9 SUBALTERNATIVE A





PLATE 10 ALTERNATIVE A

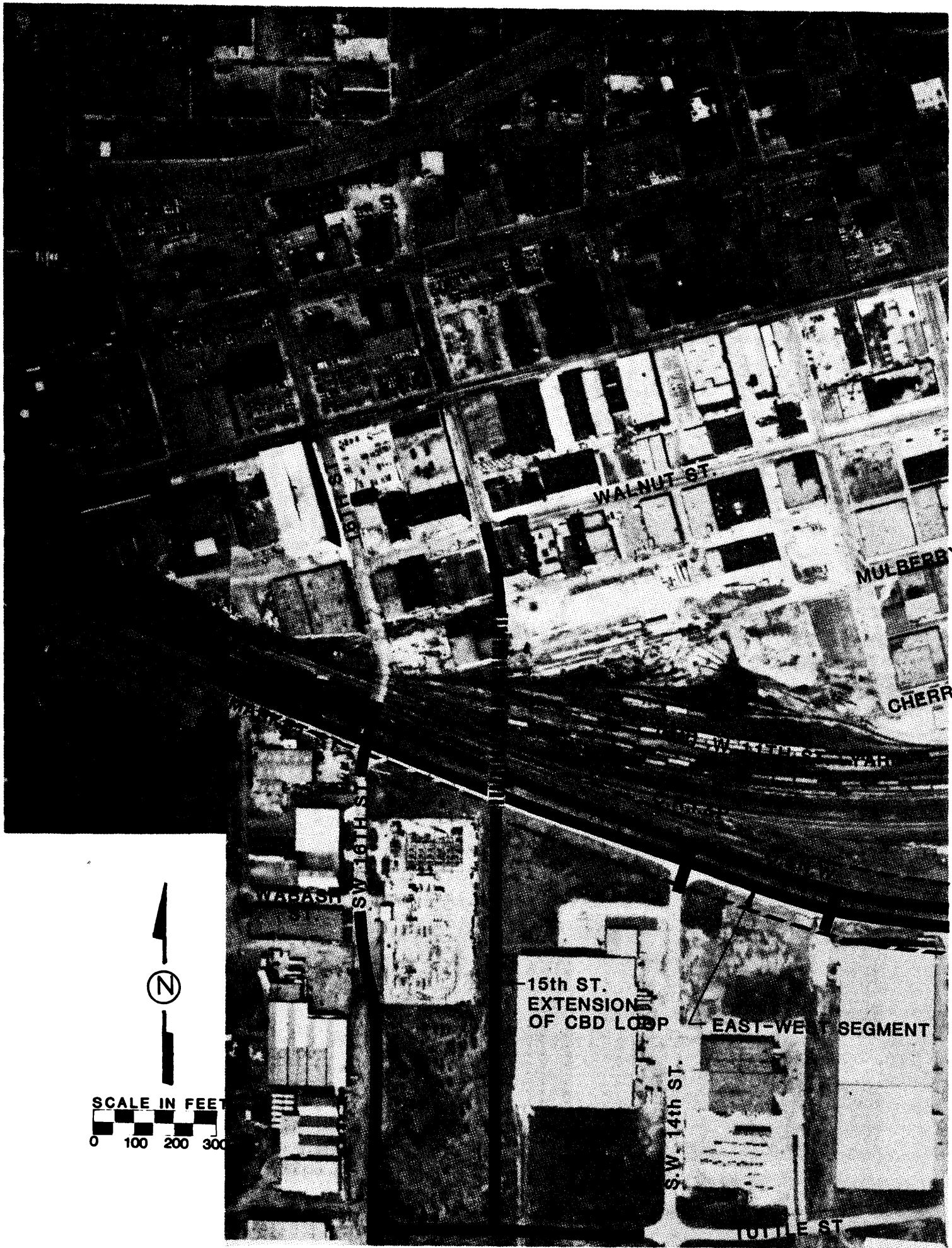


PLATE 11 ALTERNATIVE B



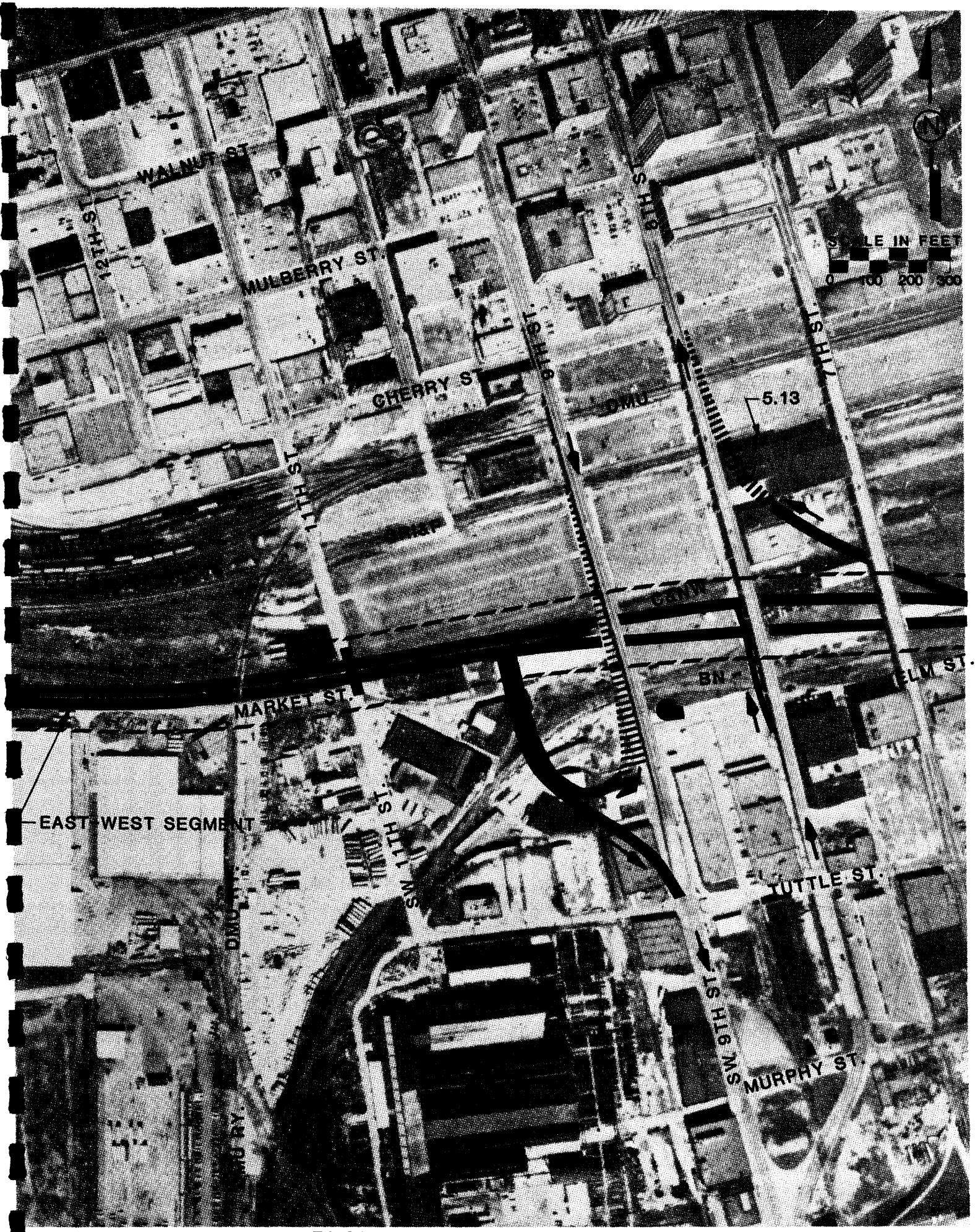
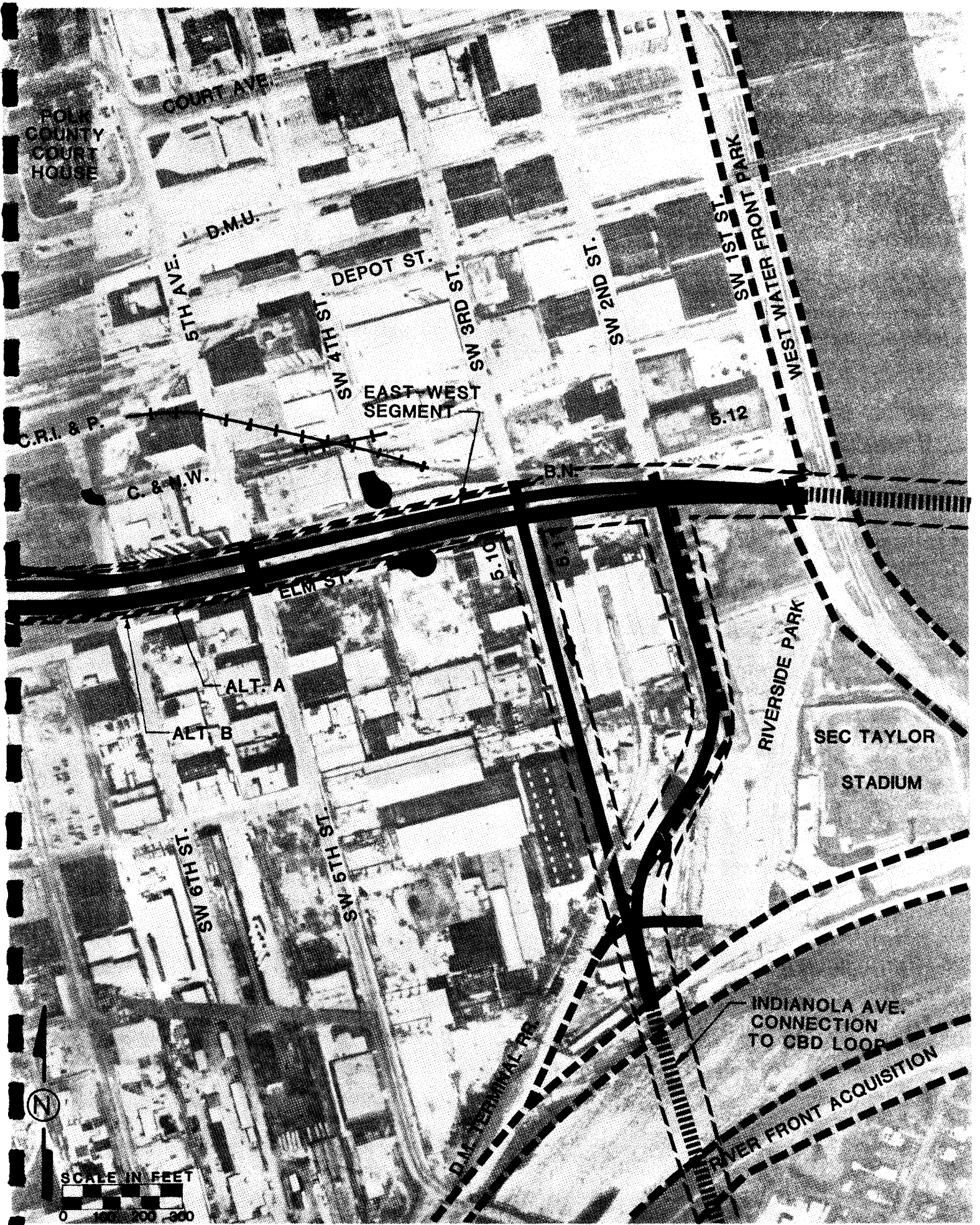


PLATE 12 ALTERNATIVE B





POLK COUNTY COURT HOUSE

COURT AVE.

D.M.U.

5TH AVE.

DEPOT ST.

SW 4TH ST.

SW 3RD ST.

SW 2ND ST.

SW 1ST ST.

WEST WATER FRONT PARK

EAST-WEST SEGMENT

5.12

C.R.I. & P.

C. & N.W.

B.N.

ELM ST.

5.10

ALT. A

ALT. B

RIVERSIDE PARK

SEC TAYLOR STADIUM

SW 6TH ST.

SW 5TH ST.

D.M. TERMINAL RR

INDIANOLA AVE. CONNECTION TO CBD LOOP

WATER FRONT ACQUISITION



SCALE IN FEET  
0 100 200 300

PLATE 13 ALTERNATIVES A & B



**APPENDIX E**

APPENDIX E

COMMENTS AND COORDINATION INDEX

	<u>Page</u>
PART 1. Agency Review Comments-----	E.1
PART 2. Coordination Prior to Final EIS-----	E.36
PART 3. Location Public Hearing-----	E.38

Rep/Dm2/AC8-2

PART 1

COMMENTS ON DRAFT EIS

<u>Agency</u>	<u>Page No.</u>
<u>Federal Agencies:</u>	
Federal Aviation Administration-----	E.2
Federal Emergency Management Agency-----	E.3
Federal Railroad Administration-----	E.4
U.S. Department of Agriculture-----	E.8
U.S. Environmental Protection Agency-----	E.9
U.S. Department of the Interior-----	E.12
U.S. Department of Transportation-----	E.17
<u>State Agencies:</u>	
Iowa Arts Council-----	E.18
Iowa Conservation Commission-----	E.20
Iowa Department of Environmental Quality-----	E.21
Iowa State Historical Department, Office Of Historic Preservation-----	E.23
<u>Local Agencies:</u>	
City of Des Moines - Historic District Commission--	E.24
Des Moines Public Schools-----	E.26
Des Moines Water Works-----	E.29
Polk County Physical Planning Department-----	E.32

Rep/Dm2/AC8-1





US Department  
of Transportation  
Federal Aviation  
Administration

Central Region  
Iowa, Kansas,  
Missouri, Nebraska

601 E. 12th Street  
Kansas City, Missouri 64106

MAY 13 1983

Mr. James A. Thompson, Director  
Traffic and Transportation Department  
City of Des Moines  
City Hall  
Des Moines, Iowa 50307

Dear Mr. Thompson:

Des Moines, Iowa Draft EIS  
CBD Loop Arterial

This project should improve access to the Des Moines Municipal Airport  
because Fleur Drive is the main access to the airport from the north.

The Des Moines Municipal Airport is the only airport providing commercial  
service for the Des Moines region, and the need for a better surface  
access to the airport can be expected to increase with time. We, therefore,  
support any and all projects which will improve access to the Des Moines  
Airport.

Sincerely,

Melvin J. Fischer  
Manager, Planning & Programming Branch

No response necessary.

E.2

MAY 16 '83 AM





Federal Emergency Management Agency  
 Region VII 911 Walnut Street Kansas City, Missouri 64106

JUN 23 1983

Mr. James A. Thompson  
 Director, Traffic and Transportation Department  
 City of Des Moines  
 City Hall  
 Des Moines, Iowa 50307

Dear Mr. Thompson:

The Regional Office of the Federal Emergency Management Agency has reviewed the Draft Environmental Impact Statement for the CBD Loop Arterial Des Moines, Polk County, Iowa.

In Section 5.100 you have addressed the impacts of this project on both the Bacon River and Des Moines River flood plains. Therefore, this office has no comments.

No response necessary.

Sincerely,

Tom Stephenson, Chief  
 Natural & Technological Hazards Division

JUN 27 1983



RECEIVED  
 TRAFFIC & TRANSPORTATION  
 DEPT.

E-3



US Department  
of Transportation  
Federal Railroad  
Administration

400 Seventh St., S.W.  
Washington, D.C. 20590  
1807 Federal Building  
911 Walnut Street  
Kansas City, MO 64106

June 29, 1983

Mr. James A. Thompson  
Traffic and Transportation Department  
City of Des Moines  
City Hall  
Des Moines, Iowa 50307

Dear Mr. Thompson:

The purpose of this letter is to provide comments concerning the proposed Des Moines CBD Loop Arterial M-2787(1)-81-77.

In this day and age when consideration is given to expediting the movement of traffic and modernizing the rail-highway transportation system, grade separation projects are essential to the uninterrupted flow of traffic and it is necessary to prevent trains from occupying the same space at the same time with vehicular traffic. The proposed project should not permit any additional rail-highway crossings at grade.

Although it is the intent of rail-highway grade separation projects to safely expedite traffic, the engineering design frequently overlooks important drainage and clearance features which directly affects railroad safety and indirectly affects highway safety.

Drainage is essential for good track as track ballast is displaced by the washing action of water and it becomes unsupportative to axle loads when contaminated with mud and water. Good track is of course needed to keep the train on the track.

Good clearance is important in the event of a derailment as it may permit a derailed car to move through the overpass area without damage to the overpass structure. It therefore becomes prudent to provide as much clearance as possible to prevent damage to the overpass structure in the event of a derailment.

Alternatives to avoid rail-highway crossings at-grade were examined but were not feasible because they resulted in significant impacts to adjacent properties, increased costs, would have steep grades, would encroach upon adjacent railroads, or affected access to adjacent properties.

JUN 1 '83 ASB

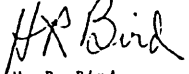
E-4

The following good design considerations are essential at rail-highway grade separation projects:

- provide space for adequate track ditches or provide for an underground storm drainage system.
- control the flow of rainfall from the highway structure. Avoid dumping the water onto the track or into the track ditches.
- concrete the abutment slopes to control vegetation and prevent erosion of the slopes and silting of the track ditches.
- provide as much clearance as possible for railroad operation to prevent damage to the overpass in the event of a derailment.

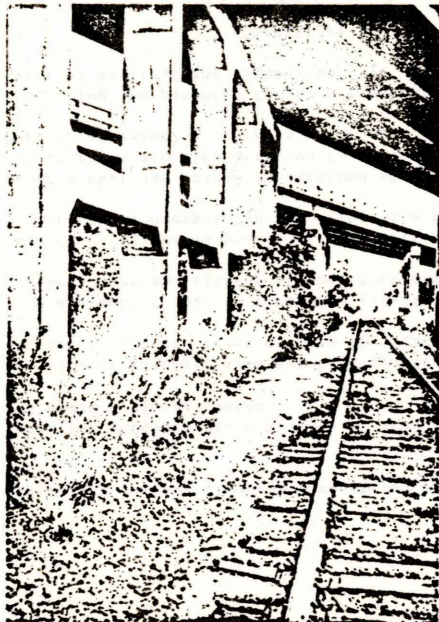
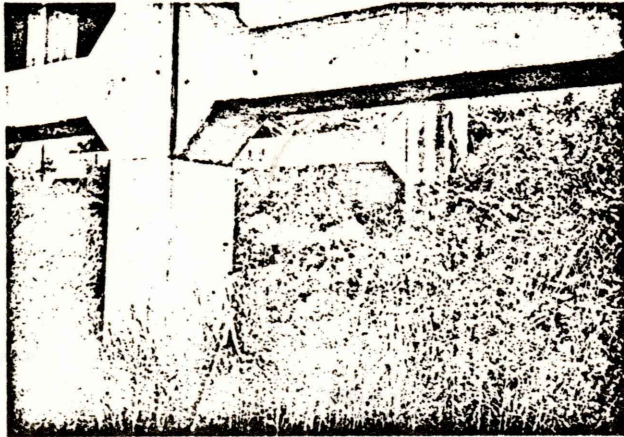
A drawing of a typical overpass bridge is attached showing proper track ditches and clearance. Photographs are also attached to show problems encountered with drainage and clearance at existing overpass structures.

These comments concerning the proposed CBD Loop Arterial at Des Moines are made in the interest of railroad and highway safety.

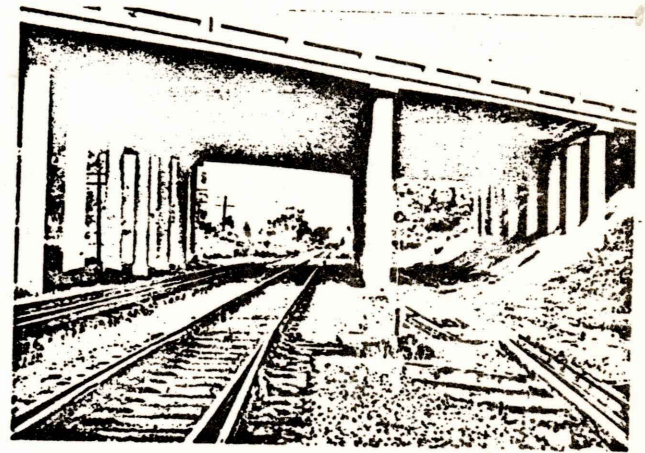
Sincerely,  
  
H. R. Bird  
Regional Director

Enclosures

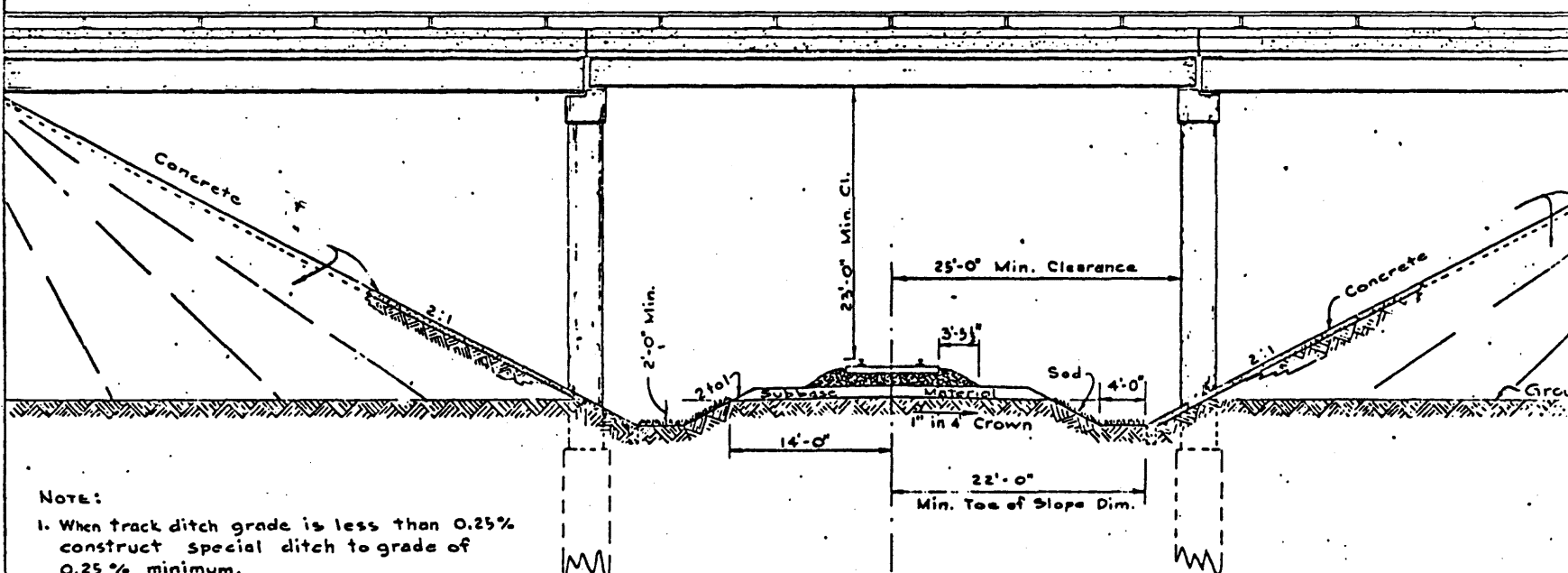




AN INTERSTATE HIGHWAY CROSSING OVER A RAILROAD. THE TRACK DITCH IS SILTED OVER WITH DIRT ERODED FROM THE EMBANKMENT SLOPE.



HIGHWAY TRAFFIC WAS RECENTLY INTERRUPTED WHEN A TRAIN DERAILMENT DAMAGED THIS INTERSTATE ACCESS ROAD. NOTICE THE CLOSE LATERAL CLEARANCE.



**NOTE:**

1. When track ditch grade is less than 0.25% construct special ditch to grade of 0.25% minimum.
2. When resurfacing track care must be taken to maintain clearance.

**TYPICAL OVERGRADE SECTION**



United States  
Department of  
Agriculture

Soil  
Conservation  
Service

693 Federal Bldg.  
210 Walnut Street  
Des Moines, Iowa 50309

June 2, 1983

Mr. James A. Thompson  
Director  
Traffic and Transportation Department  
City of Des Moines  
City Hall  
Des Moines, Iowa 50309

Dear Mr. Thompson:

The draft environmental impact statement for the CBD loop arterial in Des Moines, Iowa was referred to the Soil Conservation Service for review and comment.

We have reviewed this impact statement and have no comments at this time.

The Polk County Soil Conservation District would be glad to provide assistance with any site problems during construction such as erosion control, drainage or related subjects.

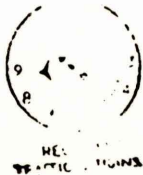
We appreciate the opportunity to review and comment on this proposed work.

Sincerely,

*William J. Brune*  
William J. Brune  
State Conservationist

No response necessary.

JUN 7 '83 AM



The Soil Conservation Service  
is an agency of the  
Department of Agriculture

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII  
324 EAST ELEVENTH STREET  
KANSAS CITY MISSOURI - 64106

July 5, 1983

Mr. H.A. Willard  
Division Administrator  
Federal Highway Administration  
P. O. Box 627  
Ames, Iowa 50010

Dear Mr. Willard:

CBD Loop Arterial, Des Moines, Polk County, Iowa

We have reviewed the Draft Environmental Impact Statement (EIS) for the project identified above. The project and statement have been rated EK-2, respectively. This rating means our Agency has environmental reservations with the project as described, and we request additional project related information be included in the final environmental statement. Our principal concerns are the potential air and noise impacts that could result from the planned arterial. These concerns, and our requests for additional information, are discussed in detail in the following comments.

Air Quality

The carbon monoxide (CO) impacts of the proposed arterial have not been adequately evaluated. One-hour CO concentrations were not provided, and background CO concentrations were not considered in calculating the estimated emission levels.

More information needs to be provided on the air quality models that were used to estimate the 8-hour CO values. The CALINE 3 and HIWAY models give only 1-hour CO concentrations. The final statement should explain how the 1-hour CO data were converted to 8-hour values. Input data such as exact line segments, associated emissions, etc., should be made available to our staff to run comparative computer models. Data from MOBILE 2 (emissions model) and HIWAY 2 (dispersion model) should be used for the CO analyses. They are the current versions of the MOBILE 1 and HIWAY 1 models.

A portion of the project area is currently in nonattainment for total suspended particulates (TSP). However, TSP levels were not considered in evaluating the roadway's effects on the Des Moines air quality. The TSP contributions, including those generated during construction, must be considered in determining the Des Moines air quality.

Refer to revised section on Air Quality Impacts in Section 5.



On page 5.94, the statement is made that, "... specific concentrations and highway-related air pollution concentrations in general resulting from CBD Loop traffic are not expected to exceed the national ambient air quality standards." That statement is not supported by the limited data presented in the draft statement. Currently CO and TSP standards are being violated within the Des Moines CBD. As we interpret the data in tables 5.23 through 5.26, the predicted 8-hour CO values for the proposed arterial would contribute an additional one to six parts per million CO emissions. This information suggests the Des Moines CBD would remain in violation of the air quality standards.

An air quality assessment should be conducted for a potential CO problem area at the intersection of Ingersoll Avenue and the proposed on-off ramps (Subalternates 1A and 1B). No average daily traffic projections were provided for the intersection, but we anticipate a high traffic volume would exist with either alternate. A large number of vehicles, combined with a start-stop traffic flow, could generate a high CO concentration.

For your information, we are currently considering a request by the Iowa Department of Water, Air, and Waste Management to reclassify the Des Moines area as attainment for CO and to reduce the size of the TSP nonattainment area. Please contact our office for a clarification of the status of this request.

#### Noise

The draft statement realistically describes the potential noise impacts to structures adjacent to the planned arterial. Depending on the alternate selected, some structures (residences, schools, churches, etc.) would receive as much as a 14dB noise level increase. Many structures would be subjected to noise levels in excess of L10 70dB, the maximum level which should not be exceeded.

Appropriate noise abatement measures are to be evaluated for effectiveness and cost during the project design phase. These measures include concrete or wood barriers, berms, elevating or depressing the roadway, and insulating or removing the affected structures. We are concerned specific noise control measures for each impacted area were not included in the draft statement. Without providing the planned abatement procedures in the report, it is impossible for our agency and others to evaluate the suitability of each abatement technique. Therefore, we request the final statement identify the noise control measures that would be installed if the loop arterial is constructed. We also reserve the right to address the adequacy of the noise control measures when they are identified.

No noise mitigation measures are being recommended at certain structures (schools, churches) because the timing of anticipated peak noise levels

Refer to revised section on Air Quality Impacts in Section 5.

Refer to revised section on Noise Impacts in Section 5.

would not coincide with normal use periods for those structures. Relating only the peak noise levels to these structures ignores the potential for non-peak level impacts on the use of these facilities. We request the final statement include an expanded noise analysis that evaluates the entire noise increase on the use of the facilities.

Noise contour distances provided in Table 5.22 (page 5.90) do not provide meaningful information. As indicated on page 5.87, the noise contour distances are generalized and do not consider shielding effects or roadway configurations. To avoid confusion as to the number or location of impacted structures, we suggest the final statement either provide L10 70dBA contours that reflect expected conditions or the table be withdrawn.

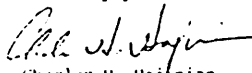
General Comments

We support the Alternate A alignment through the Water Works Park area. This alignment would allow future onsite expansion of the Des Moines water system. Furthermore, Alternate B would generate a higher noise level and create a more adverse impact to the Water Works Park.

The discussion of deicing salts on the water quality of the Des Moines and Raccoon Rivers does not consider when the salt is applied. Street deicing salts are usually applied during the winter months when flows in both rivers are normally low. Consequently, a more concentrated runoff would enter the rivers with the potential for damage to the aquatic system. We suggest a more comprehensive discussion of street runoff and the impacts on water quality be included in the final statement.

Thank you for the opportunity to review and comment on this draft statement. If you wish to discuss the project or our comments, please contact me. The member of my staff who is most familiar with the project is Robert Fenmore. He can be reached at (R16) 374-5593 or FTS 758-5593.

Sincerely yours,



Charles H. Bayajian  
Chief, Environmental Review Branch

Refer to revised section on Noise Impacts in Section 5.

Table 5.22 has been deleted.

The Preferred Alternative has a revised interchange layout in the Des Moines Water Works area. This alternative was developed using input from representatives of the Water Works to minimize impacts to this area.

E.11



United States Department of the Interior

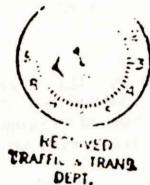
NATIONAL PARK SERVICE  
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

In Reply Refer To:  
ER 83/617

JUL 6 1983

JUL 11 '83



Mr. Hubert A. Willard  
Division Administrator  
Federal Highway Administration  
P.O. Box 627  
AMES, Iowa 50010

Dear Mr. Willard:

This is in response to the request for the Department of the Interior's comments on the draft environmental/Section 4(f) statement for CBD Loop Arterial (I-235/Harding Road to US-65/69), Des Moines, Polk County, Iowa.

SECTION 4(f) STATEMENT COMMENTS

Sam Cohen Park. We concur that there are no feasible and prudent alternatives to the proposed use of Sam Cohen Park. Measures to minimize harm should include a controlled intersection in the vicinity of the park to assure safe pedestrian access from the northeast, adequate pedestrian walkways, and appropriate landscaping in both the new highway right-of-way and adjacent park areas. Since noise appears to be a serious problem in this park, we recommend that a special effort be made to reduce project related noise levels in the vicinity of Sam Cohen Park, consistent with other urban design considerations.

Hawthorn Park. Since no avoidance alternatives are discussed in the draft statement, we cannot concur at this time that there are no feasible and prudent alternatives to the proposed use of Hawthorn Park. We recommend that special consideration be given to minor modifications in highway geometrics and/or minor alignment shifts to avoid use of this park. If avoidance cannot be achieved, measures to minimize harm should include appropriate landscaping in both the right-of-way and adjacent park areas. In any case, we recommend the provisions of noise walls or berms to reduce project related noise impacts on Hawthorn Park.

Riverside Park. We concur that there are no feasible and prudent alternatives to the proposed use of Riverside Park. However, we recommend that additional attention be given to slight modifications in highway geometrics and/or slight alignment shifts to minimize use of

Noise abatement measures were analyzed for this park but were found to be ineffective and visually intrusive upon the park. It is proposed that this park be relocated to an appropriate site elsewhere in the neighborhood as part of this project.

An avoidance alternative was examined after the Draft EIS was distributed. This Preferred Alternative would narrow the project right-of-way adjacent to the park and would not require the taking of any park land. Noise abatement measures were analyzed for this site and would be effective in reducing noise levels. However, because this area of the park is not heavily used, these measures are not considered cost-effective.

E. 12

this parkland (or use of the adjacent West Water Front Park). Measures to minimize harm should include appropriate landscaping, maintenance of access between Riverside Park and West Water Front Park, and special design to fully utilize the space beneath the proposed bridge structure for park purposes.

Chamberlain Park. Based on information in the draft statement, it does not appear that there is any need to acquire land from Chamberlain Park for highway use. Alternatives 2A and 2B (the intersection alternatives) totally avoid the direct taking of land from the park, while minor changes in the geometrics and/or the alignment of Alternatives 1A and 1B (the interchange alternatives) could also avoid such direct taking of land. Measures to minimize harm, if Alternative 1A or 1B is selected, should include appropriate landscaping in the right-of-way and adjacent park areas, the replacement of parking space lost to the project, and the provision of safe pedestrian access for park users. In addition, we recommend that a special effort be made to reduce project related noise levels in the vicinity of Chamberlain Park, consistent with other urban design considerations.

Riverfront Development Areas. We concur that there are no feasible and prudent alternatives to the proposed use of land from the Riverfront Development Areas. Measures to minimize harm should include appropriate landscaping and restoration work, the maintenance of access along the river front, special designs to fully utilize the space beneath bridge structures for park purposes, and the relocation and restoration of the bike path and hiking trails, including provisions to accommodate proposed future paths and trails. Special attention should be given to the reduction of traffic noise from the bridge crossings, consistent with other urban design considerations.

Water Works Park. We concur that there are no feasible and prudent alternatives to the proposed use of some land from Water Works Park. Based solely on the alternatives presented in the draft statement we prefer Alternative A in this area because of lesser impacts to the park area. However, in our opinion a significant urban design opportunity is being overlooked. We strongly recommend that all concerned parties cooperate in the development of an innovative design in this part of the Water Works Park that will accommodate expansion of the water treatment facilities and needed transportation improvements, as well as park/recreation areas and activities in this unique river area. We suggest that such design maximize the use of the existing Fleur Drive corridor for transportation purposes, and that consideration be given to the use of Section 147 of the Federal Aid Highway Act of 1976 in the development of water-oriented recreational facilities.

In addition to the above, measures to minimize harm should include appropriate landscaping and restoration work, the maintenance of pedestrian and bicycle access along the river bank, special attention to the utilization of space beneath bridge structures for park purposes and noise

Alignment variations were evaluated and found to be unfeasible because of impacts these shifts would cause in other segments of the alignment. Landscaping is proposed as part of the project adjacent to this park. The project will not affect access between Riverside Park and West River Front Park.

The Preferred Alternative will avoid Chamberlain Park. As it will be located over 600 feet from this park, no indirect impacts are expected to result from the project.

The existing bike path will be relocated under the roadway as part of this project. The design of the project will allow sufficient clearance for future bikeways and trails to pass underneath each of the proposed bridges.



abatement measures on both the bridge structures and at-grade roadway sections. We are especially concerned about the potential loss of the Technical High School athletic practice fields, and strongly recommend that they be functionally replaced at project expense, either in Water Works Park or at some nearby location.

Additional Parkland Mitigation. In addition to the above site-specific measures to minimize harm to park and recreation areas, your response to the second proviso of Section 4(f) should include, at project expense, replacement land, in-lieu mitigation to restore and upgrade amenities on remaining parkland, and/or monetary compensation, for all parkland lost to the proposed highway. All measures to minimize harm should be coordinated with and approved by the Des Moines Park Department, and resolutions reached should be described in the final statement.

Architectural/Historic Resources. Since no avoidance alternatives are discussed in the draft statement, we cannot concur at this time that there are no feasible and prudent alternatives to the proposed demolition of some five or six historic properties potentially eligible for inclusion on the National Register of Historic Places. We recommend that special consideration be given to site-specific modifications in highway geometrics and/or alignment to avoid the need for demolition. If avoidance cannot be achieved, measures to minimize harm should include relocation, recordation, and/or architectural salvage, as appropriate.

The draft statement indicates that some 31 additional properties of historical/architectural significance that contribute to the values of the Sherman Hills Historic District will also be demolished. These properties, however, are not located on any of the maps, nor is their relationship to the proposed project depicted in the statement. We strongly urge that these properties be treated as Section 4(f) resources, and that special consideration be given to avoidance alternatives, as well as to measures to minimize harm. Decisions reached about all architectural/historic resources should be discussed in the final Section 4(f) statement.

POTENTIAL SECTION 6(f) INVOLVEMENT

Land and Water Conservation Fund (L&WCF) assistance was involved in the development of a bike path along both sides of the Des Moines River. Because the proposed project will require that part of the bike path be relocated from its existing location, compliance with Section 6(f) of the L&WCF Act as well as with Section 4(f) may need to be accomplished.

Section 6(f) provides that no property acquired or developed with assistance under this section shall, without the approval of the Secretary of the Interior, be converted to other than public outdoor recreation uses. It also requires the substitution of converted lands with other recreation properties of at least equal fair market value

Noise abatement measures on the bridge structure are being considered.

The use of this athletic field has been discontinued.

Coordination with the Des Moines Park Board has been done as part of this project. A letter from the Board regarding measures to minimize harm appears in Appendix B of the attached Section 4(f) Statement.

The Preferred Alternative will displace two structures considered potentially eligible for the National Register of Historic Places. Avoidance alternatives were analyzed but were not feasible because of poor geometrics or impacts to other adjacent historic properties. Measures to minimize harm appear in the MOA in Appendix B of the attached Section 4(f) Statement.

The Preferred Alternative will displace 23 of these contributing structures. They are discussed in the Section 4(f) Statement for this project. Measures to minimize harm appear in the MOA of Appendix B of the attached Section 4(f) Statement.

E.14

Mr. Hubert A. Willard

4

and of reasonably equivalent usefulness and location. The National Park Service is designated by the Secretary of the Interior to consider approval of Section 6(f) conversion requests upon submission through the State Liaison Officer (SLO) for Outdoor Recreation. To determine specifically whether Section 6(f) applies to the particular portion of the bike path to be relocated, the Iowa SLO should be consulted. This official is Mr. Larry J. Wilson, Director, Iowa Conservation Commission, Wallace State Office Building, East Ninth and Grand, Des Moines, Iowa 50319.

ENVIRONMENTAL STATEMENT COMMENTS

The final environmental statement should provide additional information on types and amounts of vegetation to be removed, specific impacts on wetlands and rivers, and use of public lands for activities such as bird watching and fishing.

No Federal threatened or endangered species, or species proposed for such classification, are known to occur in the highway corridor and there is no designated critical habitat in the project area at this time. This precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended. Should the project be modified or new information becomes available that indicates listed or proposed species may be affected, consultation should be initiated.

FISH AND WILDLIFE COORDINATION ACT COMMENTS

The draft statement identifies the anticipated need for a Section 404 permit to place fill in a wetland. However, the statement lacks adequate information on anticipated impacts to fish and wildlife and their habitats. The need for mitigation measures is identified but no mitigation alternatives are provided for review. Accordingly, our comments do not preclude separate evaluation and comment by the Fish and Wildlife Service (FWS) when reviewing the permit application(s). Based on available information, the FWS advises that its tentative position would probably be to concur to permit issuance subject to stipulations which will provide adequate mitigation for the filling of the wetland, for the removal of vegetation, and for any alteration of public access to and use of river bank areas.

When appropriate site-specific impact information and mitigation measures are available, the FWS would be pleased to coordinate with you to preclude delay and to ensure that any permit stipulations or conditions are understood and included in the final statement. Please consult with the Field Supervisor, U.S. Fish and Wildlife Service, Rock Island Field Office, 1630 Second Avenue, Rock Island, Illinois 61201 (Telephone: FTS 366-5800 or Commercial (309) 793-5800).

A description of this impact has been submitted to the Iowa SLO. His response appears in Appendix B of the attached Section 4(f) Statement.

This information appears in Section 5 of the Final EIS.

An avoidance alternative was developed after the Draft EIS was distributed. This alternative involved bridging, rather than filling, the wetland and has been coordinated with the U.S. Fish and Wildlife Service (refer to letter in Part 2 of this Appendix).

E.15

Mr. Hubert A. Willard

5

SUMMARY COMMENTS

The Department of the Interior does not concur with Section 4(f) approval of the proposed project at this time. We would be willing to reconsider this position upon receipt of revised documentation that addresses the points mentioned in our comments above.

The final Section 4(f) statement should include a thorough discussion of other alternatives to the use of Section 4(f) lands and properties, and specific measures to be included in the project to minimize harm to Section 4(f) resources, including replacement and/or other adequate compensation for the lands to be taken.

In the meantime, our bureaus at the field level are willing to cooperate and coordinate with you on a technical assistance basis in further project evaluation and assessment. For matters pertaining to cultural, park, and recreational resources, please contact the Regional Director, Midwest Region, National Park Service, 1709 Jackson Street, Omaha, Nebraska 68102 (Telephone: FTS 864-3431 or Commercial (402) 221-3431). For matters pertaining to fish and wildlife resources, please contact the FWS office referenced under FISH AND WILDLIFE COORDINATION ACT COMMENTS above.

We appreciate the opportunity to provide these comments.

Sincerely,

  
Bruce Blanchard, Director  
Environmental Project Review

cc: Mr. C. I. MacGillivray  
Director, Planning and Research Division  
Iowa Department of Transportation  
800 Lincoln Way  
Amos, Iowa 50010

Mr. James A. Thompson  
Director, Traffic and Transportation  
Division  
City Hall  
Des Moines, Iowa 50307

E.16



U.S. Department of  
Transportation  
Office of the Secretary  
of Transportation

# MEMORANDUM

Subject: Draft EIS/Section 4(f) Evaluation  
CBD Loop Arterial, Des Moines, Iowa  
FHWA-IA-EIS-83-01-D

Date: June 14, 1983

From: Eugene L. Lehr, Chief *EL*  
Environmental Division, P-37

Reply to: RCrecco, P-37  
Attn of: X-64298

To: Harter M. Rupert, Chief  
Environmental Division, FHWA/HEV-11

We appreciate the opportunity to review this draft EIS. We have no  
comments.

No response necessary.

E.17

JUL 7 83 *AB*



RECEIVED  
TRAFFIC & TRANSPORT  
DEPT.



May 19, 1983

RECEIVED  
MAY 20 1983  
OFFICE FOR PLANNING  
AND PROGRAMMING



State Capitol Complex  
Des Moines, Iowa 50319/(515)281-4451

A. Thomas Wallace  
Office for Planning and Programming  
Iowa State Clearinghouse  
523 East 12th Street  
Des Moines, IA 50319

RE: Item 4 IA 830509-268  
Draft Environmental Impact  
Statement, CDB Loop Arterial,  
City of Des Moines

Dear Mr. Wallace:

I am writing in regard to the Draft Environmental Impact Statement for the Central Business District Arterial Highway, City of Des Moines.

Particular emphasis should be placed on Arts Council interest in preserving buildings of architectural significance in the project area. Our primary concern is focused on structures whose over-all design or ornamental detailings may serve as good examples of architectural styles which were practiced in the City of Des Moines as art forms during the nineteenth and twentieth centuries.

The Draft Statement is a commendable document in that eligible and actual National Register of Historic Places structures are described as falling within or near the proposed right-of-way. We note that from four to six eligible properties would be displaced by the project, depending on the alternate selected, but that six actual properties (including a neighborhood designated as a district) would be spared.

If the State of Iowa is convinced that such an arterial loop is necessary, I entreat you to consider the following:

1. Efforts should be made to move the single family dwellings located at 940 19th Street and 2015 Pleasant Street onto vacant lots in the Sherman Hill Historic District. Such efforts should be coordinated with or by the Sherman Hill Association, a non-profit organization seeking to preserve and enhance the residential integrity of the neighborhood in question.
2. Efforts should be made also to move or in some way preserve elements of other such important structures as the Green International Building located at 2015 Grand Avenue.
3. Environmental considerations should be comprehensive enough to avoid compromising the essential residential qualities of the Sherman Hill area. Lowering grade levels for the right-of-way is much more desirable to a historic district and its sight-lines than noise walls and other such devices considered to be acceptable solutions in regular neighborhoods. Sight-lines, and noise vibration levels affect historic districts more severely than most, and weigh more heavily as a burden against the general public good claimed as a rationale for re-construction of highways.

The Memorandum of Agreement regarding cultural resources for this project specifies the mitigation for historic homes in the Sherman Hill area that will be displaced by the project. The residence at 2015 Pleasant Street was moved into the district several years ago.

The Preferred Alternative will not impact this property.

Two alternatives that would depress the roadway were analyzed in the Draft EIS but were not selected because they would impact more homes in this area, would be closer to the historic district and would be more expensive. An earth berm or wall would be included in the design of the project. The aesthetics of the berm or wall would be a major element of the design.

4. Lastly, since the Sherman Hill district has an unusually large concentration of city-mandated, neighborhood-organized and nationally-affiliated commissions, associations and groups committed to historic preservation and Victorian lifestyles, unusual efforts should be made to enlist public commentary through indigenous channels. I suggest contacting the Sherman Hill Association for a list of local organizations likely to be interested in the public hearings yet to be held.

Coordination with the Sherman Hill Association has been maintained throughout the project.

Thank you for the opportunity to review the draft environmental statement.

Sincerely,



Dr. Sam W. Grabarski  
Executive Director

SWG/clb

cc: Mr. H. A. Willard, Division Administrator, Federal Highway Administration  
Mr. Harold C. Schiel, Urban Systems Engineer, Iowa Department of Transportation  
Mr. James A. Thompson, Director, Traffic and Transportation Department, City of Des Moines  
Guy Roberts, President, Sherman Hill Association  
Elaine Estes, Chairperson, City of Des Moines Commission on Historic Districts

COMMISSIONERS  
RICHARD W. REINER - Chairman - Muscatine  
JOHN E. FIELD - Vice Chairman - Pottawattamie  
CAROLYN L. WOLTER - Des Moines  
BASTIEN FRESE - Winnebago  
DONALD E. ANDRUSSEN - Taylor County  
MARILYN PIKE - Boone  
RICHARD THORNTON - Des Moines



Larry J. Wilson - Director  
Wallace State Office Building, Des Moines Iowa 50319  
515/281-5145

An EQUAL OPPORTUNITY Agency

June 16, 1983

A. Thomas Wallace  
Office of Planning and  
Programming  
L O C A L

RE: Des Moines CBD Loop Arterial

Dear Mr. Wallace:

The Iowa Conservation Commission has reviewed the draft environmental impact statement for the CBD loop arterial, Des Moines, Polk County, Iowa. From our preliminary look at this statement, we would support Alternate A with appropriate mitigation for wetland losses on the East Fifteenth Street extension. However, as this project progresses in the selection of the alternate routes and design, we would appreciate being informed of these decisions for further review and comment.

Thank you for the opportunity to review and comment on this statement.

Sincerely,

LARRY J. WILSON, DIRECTOR  
IOWA CONSERVATION COMMISSION

cc: Martha A. Whitson

The wetland impact described in the Draft EIS has now been minimized by changing the design concept from a roadway on fill to a bridge in this area. Coordination with the Iowa Conservation Commission and the U.S. Fish and Wildlife Service regarding this wetland has been conducted during the planning for this project.



iowa department of environmental quality

reply to Stephen W. Ballou - Main Office  
phone 515/281-8854

June 10, 1983

A. Thomas Wallace  
State Clearinghouse  
Office of Planning & Programming  
L O C A L

RE: Item 4 IA 830509-268  
Draft Environmental Impact  
Statement, COB Loop Arterial  
City of Des Moines

Dear Mr. Wallace:

The Draft Environmental Impact Statement (EIS) for the Central Business District Loop Highway has been reviewed by my staff. We have several concerns with this proposed project, which should be addressed before this project is approved.

WATER CONCERNS

Water Supply. The proposed routes pass over or near the Des Moines Water Works. The EIS addresses this, starting on page 5.43. We would encourage further cooperation between the applicant and the Water Works to ensure that any construction does not degrade water in either the Raccoon River or the gallery system at the Water Works.

Dredge & Fill Permits. Page 5.105, paragraph 1, mentions that a Section 404 permit may be needed from the Corps of Engineers for river crossings and filling of wetland areas. The applicant is reminded that 401 certification from this Department is also required if a 404 permit is needed.

AIR CONCERNS

Open Burning. Page 5.109, paragraph 2 states that open burning "of landscape wastes shall be limited to areas located at least one-fourth mile from any inhabited building." Section 400--4.2(4) Iowa Administrative Code, specifically prohibits the open burning of landscape wastes in Des Moines. The applicant is reminded that open burning of wastes is not permitted and an alternative method of disposal must be found.

Particulate Matter. This area is classified as a secondary non-attainment area for total suspended particulates (TSP). Furthermore, part of this area is classified as a primary non-attainment area for TSP. For these reasons, special

Refer to revised section on Construction Impacts in Section 5.

SWB:blb



A. Thomas Wallace  
Office of Planning & Programming  
June 10, 1983  
Page 3

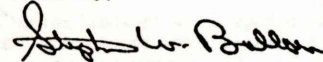
DICO is on the EPA national priority list respective to superfund. Essentially, this site is an uncontrolled hazardous waste dump. No construction or excavation should occur in this area. Any construction that increases water run-off to, or public contact with, this site must be avoided.

The proposed route also passes through or near the old Tuttle Street Landfill site. This landfill is a potential superfund site, and EPA is currently conducting tests there. No excavation or construction should occur in this area. Any construction that increases water run-off to, or public contact with, this area must be avoided. The City of Des Moines Office of Planning and Zoning has detailed maps showing the exact location of this site.

Spill Prevention. The proposed routes also pass over, or near to, the north end of the gallery system of the Des Moines Water Works, and over the Raccoon and Des Moines Rivers. Any new road or increase in traffic flow increases the potential for transportation related spills of hazardous materials. Spill prevention plans, including physical measures to protect this gallery system and the rivers, should be included in this project.

Thank you for providing the opportunity to comment on the Draft Environmental Impact Statement.

Sincerely,



Stephen W. Ballou  
Executive Director

The U.S. EPA initiated remedial action at the DICO site in 1987. Coordination has been initiated with EPA representatives to ensure the compatibility of the CBD Loop Arterial design with this remedial action.

E.22

SWB:blb

IOWA STATE HISTORICAL DEPARTMENT  
OFFICE OF HISTORIC PRESERVATION

ADRIAN D. ANDERSON, Executive Director  
STATE HISTORIC PRESERVATION OFFICER

June 3, 1983

Mr. A. Thomas Wallace  
Federal Funds Coordinator  
Office for Planning and Programming  
523 East 12th Street  
Des Moines, Iowa 50319

JUN 10 1983  
JUN 10 1983  
OFFICE OF THE  
ADRIAN D. ANDERSON

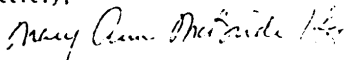
RE: Draft Environmental Impact State for CBD Loop Arterial Administrative  
Action; City of Des Moines, County of Polk, IOWA

Dear Mr. Wallace:

The Archaeologist, Architectural Historian and Historian in our office have reviewed the Draft Environmental Impact Statement for the CBD Loop Arterial Administrative Action. We concur that the EIS fully takes into account the impact the project will have on cultural resources. The EIS notes that any further archaeological work will be done in the design stage of the project, and proposes adequate mitigative measures for architectural and historical resources.

We appreciate the opportunity to review the EIS. If you have any questions concerning our comments, please do not hesitate to contact our office.

Sincerely,



Adrian D. Anderson, Executive Director  
State Historic Preservation Officer

ADA/spj

cc: Martha Whitson; Brice, Petrides & Assoc., Engineers

No response necessary.

June 21, 1983

James A. Thompson, Director  
Traffic and Transportation Department  
City of Des Moines  
City Hall  
Des Moines, Iowa 50307



HISTORIC DISTRICT  
COMMISSION  
EAST FIRST AND DES MOINES  
DES MOINES, IOWA 50307  
515-281-1187

ALL AMERICA CITY 1981, 1979, 1971

RE: CBD Loop Arterial

Dear Mr. Thompson:

The Historic District Commission has received and reviewed the Draft Environmental Impact Statement for the CBD Loop Arterial.

At their meeting on May 3, 1983, the Historic District Commission endorsed the general concept of the CBD Loop Arterial but requested that it be designed to have minimal impact on the Sherman Hill Historic District. It was suggested that this could be accomplished by lowering the grade of the roadway along Harding Road and by exploring the possibility of burying the roadway under Grand and Ingersoll.

The Commission's subcommittee to investigate the loop arterial had the following suggestions on lowering the grade of the highway:

The level of the highway is low enough at its intersection with Woodland Avenue to have minimal impact on the Sherman Hill Historic District. However, the level of the highway should be lower at the intersection with Pleasant and also at the intersection with Center. The lower grade will offer an unimpeded view of the Woodland Cemetery from the Sherman Hill area and should reduce the noise impact.

The Commission would also request that a decision be made quickly on the highway. The Sherman Hill area has been negatively impacted by the lack of a decision on the highway. Properties along Harding Road and 20th Street have declined as owners have been unwilling to make improvements because of the proposed highway. These poorly kept properties reflect badly on all of the neighborhood as those properties along Harding Road are some of the most visible in the Sherman Hill area.

The Preferred Alternative was partially selected because it minimized impacts to the Sherman Hill area. Although it does not involve lowering the grade along Harding Road north of Ingersoll Avenue, it is shifted further to the west than away from the area than were either Alternatives A or B. It also results in the displacement of fewer homes that are considered contributing to the significance of the Sherman Hill Historic District. The roadway will still underpass Grand Avenue. This alternative was reviewed with representatives of the Sherman Hill Association prior to its selection. A landscaped berm or wall is proposed along the eastern edge of the CBD Loop from Crocker Street to Woodland Avenue to serve as a buffer for the district and to reduce noise levels.

Mr. Jim Thompson  
June 21, 1983  
Page Two

The Commission would also request that the City investigate moving houses to be displaced by the highway project that are architecturally or historically significant to vacant lots in Sherman Hill. This will result in infill development in the Sherman Hill neighborhood and also save significant buildings.

Sincerely,

*Elaine Estes*

Elaine Estes, Chairperson  
Historic District Commission

EE/MN/lh

This mitigative measure for these houses is provided in the Memorandum of Agreement for this project (see Appendix B of the attached Section 4(f) Statement). It provides for moving these structures.

JUL 5 '83 AM



RECEIVED  
TRAFFIC & TRANSPORTATION  
DEPT.



June 21, 1983

James A. Thompson, Director  
Traffic and Transportation Department  
City of Des Moines  
City Hall  
Des Moines, Iowa 50307



HISTORIC DISTRICT  
COMMISSION  
EAST FIRST AND DES MOINES  
DES MOINES, IOWA 50307  
319-281-1187

ALL AMERICA CITY 1981, 1979, 1981

RE: CBD Loop Arterial

Dear Mr. Thompson:

The Historic District Commission has received and reviewed the Draft Environmental Impact Statement for the CBD Loop Arterial.

At their meeting on May 3, 1983, the Historic District Commission endorsed the general concept of the CBD Loop Arterial but requested that it be designed to have minimal impact on the Sherman Hill Historic District. It was suggested that this could be accomplished by lowering the grade of the roadway along Harding Road and by exploring the possibility of burying the roadway under Grand and Ingersoll.

The Commission's subcommittee to investigate the loop arterial had the following suggestions on lowering the grade of the highway:

The level of the highway is low enough at its intersection with Woodland Avenue to have minimal impact on the Sherman Hill Historic District. However, the level of the highway should be lower at the intersection with Pleasant and also at the intersection with Center. The lower grade will offer an unimpeded view of the Woodland Cemetery from the Sherman Hill area and should reduce the noise impact.

The Commission would also request that a decision be made quickly on the highway. The Sherman Hill area has been negatively impacted by the lack of a decision on the highway. Properties along Harding Road and 20th Street have declined as owners have been unwilling to make improvements because of the proposed highway. These poorly kept properties reflect badly on all of the neighborhood as those properties along Harding Road are some of the most visible in the Sherman Hill area.

The Preferred Alternative was partially selected because it minimized impacts to the Sherman Hill area. Although it does not involve lowering the grade along Harding Road north of Ingersoll Avenue, it is shifted further to the west than away from the area than were either Alternatives A or B. It also results in the displacement of fewer homes that are considered contributing to the significance of the Sherman Hill Historic District. The roadway will still underpass Grand Avenue. This alternative was reviewed with representatives of the Sherman Hill Association prior to its selection. A landscaped berm or wall is proposed along the eastern edge of the CBD Loop from Crocker Street to Woodland Avenue to serve as a buffer for the district and to reduce noise levels.

Mr. James A. Thompson  
Page 2  
July 25, 1983

In addition to the parking for the Tech building, there are presently 62 residential students in the area. The proposal has a bridge at the Ingersoll intersection between 19th and Harding Road over which students could walk, so it does not appear that additional safety measures would be necessary. It was indicated that the Arterial Project would go under Woodland and Grand Avenue so access to the Tech facility should not be a problem for students living in the area.

The influence of a new project on Edmunds Elementary School at 17th and Crocker, north of the freeway, is not clearly discernable, but more safety precautions could be necessary. There are currently 120 students affected by the project and there presently are crossguardians at the corner of Cottage Grove and 19th, as well as at the Harding Road intersection just south of the freeway.

There are 22 children in the area of S.E. 7th and Railroad Streets that are presently transported to Longfellow School who would be affected. Bus transportation cannot be provided at a dead end street so some provision will be necessary for these students.

A considerable number of students in the area of S.E. 5th and Indianola Road go to Weeks and Howe Schools. An additional traffic light is already proposed for S.E. 5th to ensure additional safety for those students affected. The overpass at the Howe facility for students east of Indianola Road seems sufficient to accommodate them. A pedestrian overpass is suggested on the east-west segment of the Arterial Project for students who live north of the segment between S.E. 7th and the river.

I believe these concerns cover all of the remaining questions which were left following your presentation. Other items mentioned at the meeting seem to have been resolved in your planning so it would be appreciated if you would consider these specific areas. If we can be of any assistance in providing additional information or explanation, please let me know. It would be appreciated if we could be made aware of the Planning Department's reactions and recommendations on each of the areas of concern listed.

The Preferred Alternative underpasses Grand Avenue but not Woodland Avenue. This is not expected to impact school pedestrian access in this area.

Traffic signals, including pedestrian signals, will be installed at the intersection of the CBD Loop and Cottage Grove Avenue to accommodate this school pedestrian traffic.

The City staff will work with the School Board to develop a solution for this area before the project is in operation.

This area is out of the project corridor for this project. There are very few residences between the CBD alignment and the Raccoon River.

Mr. Jim Thompson  
June 21, 1983  
Page Two

The Commission would also request that the City investigate moving houses to be displaced by the highway project that are architecturally or historically significant to vacant lots in Sherman Hill. This will result in infill development in the Sherman Hill neighborhood and also save significant buildings.

Sincerely,

*Elaine Estes*  
Elaine Estes, Chairperson  
Historic District Commission

EE/MN/1h

This mitigative measure for these houses is provided in the Memorandum of Agreement for this project (see Appendix B of the attached Section 4(f) Statement). It provides for moving these structures.

E.25

JUL 5 1983



RECEIVED  
TRAFFIC & TRANS.  
DEPT.

DEAN W. JOHNSON  
SECRETARY AND GENERAL MANAGER

DES MOINES WATER WORKS  
BOARD OF WATER WORKS TRUSTEES  
1003 LOCUST STREET  
DES MOINES, IOWA 50307

1:17 PM

July 11, 1983

Mr. James A. Thompson, Director  
Traffic and Transportation Department  
City of Des Moines  
City Hall  
East First & Locust St.  
Des Moines, IA 50307

SUBJECT: Central Business District Loop Arterial

Dear Mr. Thompson:

We appreciate this opportunity to provide you with the concerns of the Des Moines Water Works regarding the CBD Loop Arterial Project for the City of Des Moines. If problems can be resolved, it certainly appears there are significant improvements to traffic flow with the proposed improvement.

It is of some concern that there was no attempt to locate physical facilities of the Des Moines Water Works prior to the development of plans for the proposed improvement. We strongly believe good communication and research during the investigative stages of this project could have minimized or possibly eliminated many of our problems and concerns. Both Alternatives A and B have very significant, but varying, impacts on the Fleur Drive Operations Center, and ultimately, the consumers who bear the costs of facilities at the Des Moines Water Works.

Our first comments are related to impacts which are addressed in the Environmental Impact Statement, but require further emphasis. With the interchange proposed for Subalternate 1B and 2B, in the area directly south of the Raccoon River and north of the current treatment facilities, any additional expansion to the north of our treatment facilities would be impossible. With this area eliminated, further plant expansion would have to be placed to the south of our current operations where foundation soils are unacceptable for construction of facilities similar to those existing at our treatment plant. Thus, we would have no space for expansion. Also, this alternative would require the disconnection and abandonment of the north end of our gallery system. Without this water resource, the availability of water to the consumers in the Des Moines area would be reduced by as much as 10 million gallons of water per day. A reduction of this magnitude would require the addition of another water resource in order to meet the water needs of the consumers. Other

Coordination meetings have been held with the Des Moines Water Works since 1983. Many revised layouts were developed for this area in an attempt to minimize impacts to the Water Works facilities (see Figure 3.12). The layout of the Preferred Alternative was reviewed with the Water Works staff prior to its selection. This alternative is located primarily to the east of Fleur Drive and away from the Water Works facilities (see Plate 4, Appendix C, and Figure 5.8).



acceptable groundwater resources of this magnitude are not available in the plant area, and as such, additional surface water storage impoundments would need to be constructed. This additional storage would be quite costly, and presumably would have to be funded totally at the cost of the water consumers of the metropolitan area.

All alternatives have a significant impact on the distribution of treated water from the Operations Center. Contained within the levee system, at the northeast corner, is the 60" diameter distribution header for the treatment plant. This header has a number of vital valves which are necessary for operation of the treatment plant, as well as distribution of the treated water to the feeder main system. As proposed with all alternatives, the ramp on the west side of the proposed improvement would pass over these vital valves and header system making them impossible to operate. This could be eliminated by shifting the bridge and ramp from Harding Rd. further to the east and connecting to Fleur Dr. with a small curve, in a manner similar to the present freeway system throughout the Des Moines metropolitan area.

The levee system surrounding the Operations Center is essential for flood protection and was specifically designed to provide a pleasing, aesthetic entrance and exit from the Des Moines downtown area to the south. With the proposed improvement, the levee would be replaced with a concrete wall in lieu of the existing grass and trees. Depending on the distance the ramp goes to the south, there is also a significant impact, both visually and audibly, to the formal gardens and fountain area contained in Water Works Park.

In addition to the Operations Center involvement, this project presents a major affect upon our distribution system. It is assumed our existing pipelines which are located within fill areas would not have to be replaced. However, in areas where extensive cuts in existing grade are proposed, pipelines and appurtenances would have to be relocated in order to facilitate the improvement. It has been estimated that as much as \$131,000.00, in present day costs, of water main adjustments may be necessary. We feel the costs of the adjustments should be included as a part of the project cost, rather than being placed upon the water users of the area.

Our second list of comments are addressed to areas of inaccuracies or additions to the Environmental Impact Statement:

Page 1.3 - Under the section entitled, "Areas of controversy and public concerns," the Des Moines Water Works was not mentioned. We feel the impact of Alternative B for both choices will tremendously affect our ability to supply the water needs of the Des Moines metropolitan area. It is our opinion this is an area of major concern and must be mentioned.

Page 4.3 - We feel the following statement from the second paragraph is misleading, "These samples have shown that occasionally some pesticides and metals have been in excess of Iowa Standards or National Academy of Science recommended maximum levels." The Des Moines Water Works has no information to

This feature has been deleted from the Preferred Alternative.

These costs have been included in the cost estimates for the project.

These additions have been included in the Final EIS.

indicate these chemicals are contained in the water. While it is possible to find pesticides and metals in a sample during times of heavy runoff, these substances are contained in the suspended solids particles rather than the water. It is our feeling this statement should be removed or revised to reflect the true state of the chemicals.

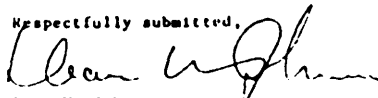
Page 4.4 - The first paragraph is missing some information. We would propose the following substitute paragraph, "The City of Des Moines obtains its municipal water supply from an infiltration gallery, a surface water intake on the Raccoon River, and a surface water intake on the Des Moines River. The infiltration gallery and the Raccoon River intake are located in Water Works Park. The infiltration gallery is a long, horizontal well which collects water from the sand and gravel alluvial aquifer deposits within the Raccoon River Valley. This aquifer receives its recharge primarily from the river and local precipitation. However, the water quality is substantially different than that of the river which indicates partial recharge from some other source."

Page 5.5 - Under the section entitled, "Commercial Relocation Impacts," nothing was mentioned regarding alternate sites to provide future treatment plant capacity if Alternative B is constructed. While the impact of Alternative B is placed upon future construction, the Des Moines metropolitan area would be subject to a substantial cost burden if the Des Moines Water Works were unable to expand plant capacity at the current site. It seems appropriate that a statement be inserted in this section regarding cost impact of this lost resource.

Page 8.1 - Under the section entitled, "Individuals Consulted," please correct "Mr. L.D. McMullen" to read Dr. L.D. McMullen, as Dr. McMullen holds a Ph.D. degree in Environmental Engineering.

We greatly appreciate this opportunity to respond to the various alternatives being considered and to make known the potential impact of this project upon the distribution and treatment facilities of the Des Moines Water Works. We greatly encourage you to consider Alternate A for adoption, since it has the lesser impact on the water treatment facilities of the Des Moines Water Works. We also strongly recommend that you consider shifting the location of Alternate A to the east slightly to avoid direct conflict with the distribution header complex, flood protection levee, clear well suction connection, and other vital facilities around the treatment plant.

Respectfully submitted,

  
Dean W. Johnson  
General Manager  
Des Moines Water Works

DWJ/crw

This change appears in the Final EIS.

The Preferred Alternative contains a revised layout design that shifts the construction primarily to the east of Fleur Drive, avoiding impacts to existing facilities and the future expansion area. This layout was developed in consultation with staff of the Des Moines Water Works.

The interchange layout of the Preferred Alternative was shifted to the east in this area (see above answer).



POLK COUNTY PHYSICAL PLANNING DEPARTMENT

409 E.E. 14th Street  
Des Moines, Iowa 50319

- Administration  
706-3387
- Building Inspection  
706-3357
- Planning/Zoning  
706-3356
- Real Estate  
706-3366
- Engineering/Surveying  
706-3376
- Animal Control  
706-3376
- 1 Hickman Road  
Des Moines, Iowa 50314
- Information  
706-3757
- Medical Examiner  
706-2107
- Clerk  
706-3796
- Air Pollution Control  
706-3927
- Health Educator  
706-3958
- Public Health  
Laboratory  
706-3929
- Preventable  
Disease Control  
706-3796

June 16, 1983

Mr. James A. Thompson, Director  
Traffic and Transportation Dept.  
City of Des Moines  
City Hall  
Des Moines, Iowa 50307

Dear Mr. Thompson:

The Draft Environmental Impact Statement (EIS) for the Central Business District Loop Arterial has been reviewed by this office. A list of concerns follows which should be addressed prior to approval of this project.

GENERAL:

Page 5.94 contains a statement that the project has been found by FHWA to conform to the SIP. This statement is somewhat misleading in that the SIP actually contains no transportation plans. The SIP contains an Appendix R (Transportation Control Measures for Des Moines) which outlines such things as changes in the signal system, the skywalk system, intersection design and construction, and street widening. Projects of this magnitude are not directly addressed.

This statement should be revised to reflect more specifically what compliance with the SIP (Appendix R) actually means.

OPEN BURNING:

Pages 5.108, Paragraph 6, and 5.109, Paragraph 1, refer to the burning of grubbing and clearing wastes and to stipulations contained in Chapter 400 Iowa Administrative Code regarding burning of landscape wastes.

Section 400 --4.2(4) Iowa Administrative Code, specifically prohibits the open burning of landscape wastes in Des Moines. Therefore, an alternate disposal method must be found and outlined in the proposal.

PARTICULATES:

Page 5.108, Paragraph 6, sites short-range deterioration of air quality as a result of grading, transportation, and handling of material.

Two Hi Volume TSP Sampler sites are located very near the construction area. One site is at SE 18th and Scott and the other is at 9th and Mulberry. Prevailing winds would carry particulates to both sides. The SE 18th site is currently the site used to provide the data

Refer to revised section on Air Quality Impacts in Section 5.

These paragraphs have been revised accordingly.

E. 32

Mr. Thompson  
June 16, 1983  
Page -2-

resulting in that area being classified as Primary non attainment. The Mulberry site is currently the site used to provide the data resulting in that area being classified as Secondary non attainment. Also, the Mulberry site recently went from Primary to Secondary non attainment. Our concern is that further air quality deterioration would result in the Mulberry site being re-classified as Primary non attainment.

No TSP Background Concentrations data is included in the Draft EIS. Another concern is the fact that no TSP predictions have been made for the project either during construction or after completion. Post-Completion would include TSP as the result of normal traffic, erosion and salting and sanding operations.

Article IX of the Polk County Board of Health Rules and Regulations provides that for the purpose of minimizing atmospheric pollution, the health officer shall have the authority to require that reasonable precautions be taken to prevent particulate matter from becoming airborne.

TSP Concentration Predictions should be made and a detailed plan of fugitive dust control must be developed which delineates measures to be used on construction haul roads, open bodied trucks and the prompt removal of material from paved streets in addition to any other applicable areas outlined in the Polk County Board of Health Rules and Regulations.

CARBON MONOXIDE:

Page 5.108 sites emissions from construction machinery as a source of short-range deterioration and Tables 5.23 through 5.27 estimate CO Levels resulting from road usage. As noted, the Draft EIS contains no CO Background Data. Page 5.91 states that both CO monitoring sites (Tech High School at 19th and Grand and the YMCA at 8th and Grand) have monitored concentrations of CO exceeding the secondary standard of nine parts per million (PPM).

The primary and secondary standards for CO are the same, therefore, the statement on page 5.91 should reflect this.

We have requested that EPA redesignate the area (represented by the Tech High School monitor) as attaining NAAQS. The proximity of this site to the proposed North-South Segment may well result in further violations as predicted by the additional concentrations represented in Table 5.23. Excursions into areas above the standard would jeopardize our redesignation request.

Refer to revised section on Air Quality Impacts in Section 5.

Refer to revised section on Air Quality Impacts in Section 5.

Precautions are described in the section on Construction Impacts in Section 5.

Refer to revised section on Air Quality Impacts in Section 5.

This statement has been revised in Section 5.

The construction alternatives will lead to a reduction in co-concentrations at this site.





POLK COUNTY PHYSICAL PLANNING DEPARTMENT

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- Air Pollution Control  
706-3927
- Health Educator  
706-3958
- Public Health  
Laboratory  
706-3929
- Preventable  
Disease Control  
706-3796

June 16, 1983

Mr. James A. Thompson, Director  
Traffic and Transportation Dept.  
City of Des Moines  
City Hall  
Des Moines, Iowa 50307

Dear Mr. Thompson:

The Draft Environmental Impact Statement (EIS) for the Central Business District Loop Arterial has been reviewed by this office. A list of concerns follows which should be addressed prior to approval of this project.

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Refer to revised section on Air Quality Impacts in Section 5.

These paragraphs have been revised accordingly.

E. 32

PART 2



# United States Department of the Interior

FISH AND WILDLIFE SERVICE

ROCK ISLAND FIELD OFFICE (ES)

1830 Second Avenue, Second Floor  
Rock Island, Illinois 61201

IN REPLY REFER TO:

COM: 309-793-5800

FTS: 386-5800

October 25, 1985

Ms. Martha A. Maxon  
Brice, Petrides & Associates, Inc.  
191 West Fifth Street,  
Waterloo, Iowa 50701

Dear Ms. Maxon:

This is in reference to your letter of October 17, 1985 concerning the Des Moines CBD Loop Arterial. You indicate that current plans are to bridge the wetland at the E. 15th Street Extension instead of filling four acres as described in the draft EIS.

We have no objection to this change in plan.

Sincerely,

Jerry L. Rasmussen  
Acting Field Supervisor

cc: FHWA (Kauffman)



**DES MOINES**  
Board of  
Water Works  
Trustees  
**WATER  
WORKS**

2201 Valley Drive  
Des Moines, Iowa 50321-1190  
(515) 283-8755

L. D. McMullen, Ph.D., P.E.  
Secretary and General Manager



October 31, 1986

Mr. James A. Thompson, Director  
Traffic & Transportation Dept.  
City of Des Moines  
E. 1st and Locust  
Des Moines, IA 50307

**SUBJECT: Central Business District Loop Project**

Dear Mr. Thompson:

We have reviewed the Draft Section 4(f) Statement for the Central Business District Loop project and outline the following areas which will have some impact upon the Des Moines Water Works:

1. The preferred alternative will require approximately 12.5 acres of land from Water Works Park.
2. The project will elevate noise levels in the area of our Pumping Station building.
3. There are several large valves and valve vaults located on Water Works' property in the vicinity of the proposed north-south and east-west bridges over the Raccoon River.
4. Vehicular traffic access underneath the bridges will be required for our maintenance activities.
5. Any pavement widening along Fleur Drive could impact the operability of existing valves.
6. Future placement of the groundwater pumps required for the TCE remedial action may be affected.
7. Our review of plates 1-19 indicates there may be significant involvement with existing Water Works' facilities along the loop, especially in the Sherman Hill area. Extreme grade cuts or fills may contribute to this involvement.



Page Two

8. With the new construction, our 30" main in Elm St., from S.W. 2nd to S.W. 5th, will be located in a high traffic area.
9. To protect the new roadway and facilitate potential main repairs, the existing mains along Fleur Drive near our Pumping Station may need to be encased in steel encasement.

During the design phase of this project, your attention to the following items would be appreciated:

1. Our requirement to maintain vehicular traffic access beneath any bridges constructed on Water Works' property.
2. Coordination of the placement of any groundwater wells on Water Works' and Dico's properties for the TCE remedial action with the arterial loop facilities.
3. Coordination of any existing water main relocations or replacements which may take place concurrently with the project's grading operations.

We appreciate the opportunity to review this phase of the Central Business District Loop Arterial project. Please keep us apprised of the project's status as it progresses. If you have any comments regarding the items mentioned above, please don't hesitate to contact me.

Sincerely,

*L.D. McMullen*

L.D. McMullen, Ph.D., P.E.  
General Manager

LDM/CRW/crw

APR 1 '86 AM



PART 3

## SUMMARY OF LOCATION PUBLIC HEARING

The Location Public Hearing for the Des Moines CBD Loop Arterial was held on June 30, 1983, in the Council Chambers, City Hall, in Des Moines, Iowa. The hearing was conducted by the Traffic and Transportation Department, City of Des Moines. Approximately 91 persons attended the meeting, which lasted one hour and 37 minutes.

There were nine persons who submitted oral statements at the meeting, one of whom represented two businesses. There were 13 written statements that were received either before the hearing or during the 10-day time limit after the meeting that were included in the official record of the hearing. A transcript of the hearing and the comments received is available in the office of the City Clerk, City Hall, Des Moines, Iowa. Comments and questions received during this hearing process are summarized in the following paragraphs. Where appropriate, responses are provided.

The Des Moines Water Works expressed concern for the effect of the project on their current operations, water supply and future expansion plans. They requested coordination with their staff during design of the project. A preference for Alternative A was expressed because of its lesser impact on Water Works facilities.

Response: Coordination meetings to receive input regarding future expansion plans were held subsequent to the public hearing. The Preferred Alternative contains a revised interchange layout in the Water Works that has minimal effect on these facilities and future plans.

Comments were received from seven businesses that would be affected by the project. Three of these businesses have facilities located in the industrial area to be served by the project: Dico Company, Inc., Carpenter Paper Company and Younkers. Dico Company, Inc., and Younkers expressed support for the project.

Carpenter Paper Company expressed concern regarding the impact of the project on its loading docks and rail sidings.

Response: The Preferred Alternative will impact these facilities and is an unavoidable impact of the project.

The Meredith Corporation, adjacent to the proposed project, expressed a preference for Alternative A, as Alternative B would affect their proposed parking lot.

Response: A coordination meeting was held with Meredith Corporation subsequent to the public hearing. The Preferred Alternative is a variation of Alternative B that would have less impact on the Meredith property than B would have.

Stew Hansen's Dodge City, Inc., M & M Sales Company and Norwest Financial Corporation (businesses that would either be displaced or lose a significant part of their property) expressed opposition to these impacts of the project.

Response: The Preferred Alternative will require the loss of part of the M & M Sales Company parking lot and a parking lot owned by Norwest Financial Corporation. These are unavoidable impacts of the project.

One apartment owner, 1920 Cottage Grove Avenue, requested early acquisition of his property.



One owner of two commercial properties to be displaced by the project (1017 and 1021 S.E. 14th Street) requested information on this impact.

The Sherman Hill Association expressed support for the project and a preference for an intersection rather than an interchange at Ingersoll Avenue. They requested that funds for moving displaced historic structures into the Sherman Hill Historic District be provided as part of the project. Noise abatement measures, access to Woodland Cemetery and a buffer area was also requested as part of the project. It was requested that further study be made of depressing the roadway in the north-south segment.

Response: The Memorandum of Agreement regarding cultural resources for this project specifies that historic structures displaced by the project will be moved as part of the project. The Final EIS makes a commitment to a landscaped berm or wall adjacent to this area that will serve as a visual buffer and provide noise abatement. Pedestrian access to Woodland Cemetery will be provided by pedestrian signals at Woodland Avenue. The Preferred Alternative would be at-grade, not depressed, in this area. It is shifted further to the west away from the district, as compared with the concepts presented in the Draft EIS. This alternative was reviewed with representatives of the Sherman Hill Association prior to its selection. Alternatives that were depressed in this area would require the taking of considerably more right-of-way.

A representative of the League of Iowa Bicyclists and the Des Moines Cycle Club asked that consideration be given to bicycle routes in association with the project.

Response: The project bridges will be designed to accommodate the underpassing of future bicycle paths that are proposed as part of the city's River Front Bicycle System. One existing bike path will be rerouted underneath the roadway as part of the project.

One group of residents submitted a petition. This petition was from 12 residents in the vicinity of E. 15th Street and Court Avenue that would be affected by the project. They requested an alignment variation that would shift this segment slightly to the east to minimize residential impacts in this area.

Response: This is an alignment variation that is still under consideration. It will be evaluated for engineering feasibility during the design of the project.

Five residents submitted individual statements. Two of these residents were from the Sherman Hill area (1701 Woodland and 1920 Pleasant). They requested mitigation for noise and visual impacts and moving of the historic houses in this area. Also, the need for pedestrian crossings for Woodland Cemetery and Edmunds School were pointed out.

Response: See previous response to Sherman Hill Association. A school pedestrian crossing will be provided for Edmunds School as part of the project.

One resident who would be displaced by the E. 15th Street Extension (1447 E. Court Avenue) asked when acquisition would occur and expressed concern for the deterioration of his property.

Two residents from outside the project corridor asked questions regarding traffic signals, railroad crossings and the I-235 interchange.

Rep/Dm2/AC8-2



**CBD Loop Arterial  
Des Moines, Polk County, Iowa**

**ADMINISTRATIVE ACTION**

**FINAL  
SECTION 4(f) STATEMENT**

**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
IOWA DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION  
AND  
CITY OF DES MOINES, IOWA**

**SUBMITTED PURSUANT TO 49 U.S.C. 1653(f)**

The following persons may be contacted for additional information concerning this document.

Mr. H. A. Willard  
Division Administrator  
Federal Highway Administration  
Ames, Iowa 50010  
Telephone: 515-233-1664

Mr. James A. Thompson, Director  
Traffic and Transportation Department  
City of Des Moines  
City Hall  
Des Moines, Iowa 50307  
Telephone: 515-283-4973

Mr. Lowell E. Richardson  
Office of Local Systems  
Iowa Department of Transportation  
Ames, Iowa 50010  
Telephone: 515-239-1291



TABLE OF CONTENTS

	<u>Page</u>
SECTION 1 - SUMMARY-----	1
SECTION 2 - DESCRIPTION OF ACTION-----	4
Description of Proposed Action-----	4
Purpose of Proposed Action-----	4
Alternatives Considered-----	5
SECTION 3 - IMPACTS TO ARCHITECTURAL AND HISTORIC RESOURCES-----	7
Introduction-----	7
Sherman Hill Historic District-----	8
Description and Project Impacts-----	8
Contributing Structures - Sherman Hill Historic District-----	8
Avoidance Alternatives-----	11
Measures to Minimize Harm-----	13
Conclusion-----	14
Woodland Cemetery-----	15
Description and Project Impacts-----	15
Avoidance Alternatives-----	15
Measures to Minimize Harm-----	16
Conclusion-----	16
Capital City Woolen Mills-----	16
Description and Project Impacts-----	16
Avoidance Alternatives-----	17
Measures to Minimize Harm-----	19
Conclusion-----	20
Clifton Heights United Presbyterian Church-----	20
Description and Project Impacts-----	20
Avoidance Alternatives-----	20
Measures to Minimize Harm-----	22
Conclusion-----	22
Old Southeast Water Trough-----	22
Description and Project Impacts-----	22
Avoidance Alternatives-----	23
Measures to Minimize Harm-----	23
Conclusion-----	23
Additional Impacts of Other Alternatives-----	23
Hillside Apartments-----	24
Apperson Iowa Motor Company-----	24
Great Western Insurance Company-----	24
Contributing Structures - Sherman Hill Historic District-----	25
Comparison of Alternatives-----	25

TABLE OF CONTENTS  
(Continued)

	<u>Page</u>
SECTION 4 - IMPACTS TO ARCHAEOLOGICAL RESOURCES-----	27
Introduction-----	27
Fort Des Moines No. 2-----	27
Old City Dump-----	28
Prehistoric Resources-----	29
Project Impacts-----	29
Avoidance Alternatives-----	30
Measures to Minimize Harm-----	31
Conclusion-----	31
SECTION 5 - IMPACTS TO PARKS AND OPEN SPACE AREAS-----	32
Sam Cohen Park-----	32
Description-----	32
Project Impacts-----	32
Avoidance Alternatives-----	33
Measures to Minimize Harm-----	35
Conclusion-----	35
Riverside Park-----	35
Description-----	35
Project Impacts-----	37
Avoidance Alternatives-----	37
Measures to Minimize Harm-----	39
Conclusion-----	40
River Front Open Space Development Areas-----	40
Description-----	40
Project Impacts-----	40
Avoidance Alternatives-----	41
Measures to Minimize Harm-----	41
Conclusion-----	42
Des Moines Water Works-----	42
Description-----	42
Project Impacts-----	42
Avoidance Alternatives-----	43
Measures to Minimize Harm-----	44
Conclusion-----	44
Additional Impacts to Other Alternatives-----	44
SECTION 6 - COMMENTS AND COORDINATION-----	45
Cultural Resources-----	45
Parks and Open Spaces-----	45
Agency Response to Draft 4(f) Statement-----	45

TABLE OF CONTENTS  
(Continued)

	<u>Page</u>
APPENDICES	
APPENDIX A - Aerial Photographs of Project	
APPENDIX B - Memorandum of Agreement and Coordination Letters-----	B-1-28
APPENDIX C - Comments Received on the Draft Section 4(f) Statement-----	C-1-12

LIST OF TABLES

	<u>Page</u>
Table 1      Summary of Section 4(f) Impacts of the Major Alternatives Considered-----	3
Table 2      Impacts to Significant Historic/Architectural Structures by the Various Alternatives of the CBD Loop Arterial-----	26

Rep/Dm3/AA8

LIST OF FIGURES

<u>Figure</u>	<u>Title</u>	<u>Following Page</u>
1	Project Alignment-----	6
2	Properties Within the CBD Loop Right-of-Way that are Eligible for the National Register of Historic Places-----	26
3	Boundaries of Site 13PK61-----	31
4	Cross-Section of Bikeway to be Rerouted Under the CBD Loop in East River Front Park-----	44
5	Cross-Section of Bikeway Under River Bridge-----	44

APPENDIX A

Plate

- 1 Index Map to Plates 2 Through 11.
- 2 Contributing Structures in the Project Right-of-Way.
- 3 Contributing Structures in the Project Right-of-Way.
- 4 Contributing Structures in the Project Right-of-Way.
- 5 Project Alignment in the Des Moines Water Works.
- 6 Project Alignment in the Des Moines Water Works.
- 7 Project Alignment in the Des Moines Water Works.
- 8 Project Alignment in Riverside Park, West River Front  
Park and East River Front Park.
- 9 Project Alignment in Riverside Park and River Front Area.
- 10 Project Alignment in Area of Fort and City Dump.
- 11 Project Alignment in Sam Cohen Park.

Rep/Dm3/AA2



## SECTION 1

### SUMMARY

The proposed project is a new four- to six-lane, divided highway that would be located in the central city area of Des Moines. The project is multipurpose, in that it would relieve major traffic congestion on many local streets as well as providing new connections to major traffic generators. It is also anticipated to enhance redevelopment of a large central city industrial area.

Numerous alternatives were analyzed for this project, including new construction alternatives, street widening alternatives, No Action and a transportation system management alternative.

The Preferred Alternative would have the least impact on Section 4(f) resources than would the other new construction alternatives that would meet the project needs. Table 1 compares the impacts of these major alternatives on Section 4(f) resources.

The Preferred Alternative's impacts on Section 4(f) properties includes:

- Demolition or movement of two structures eligible for the National Register of Historic Places.
- Demolition or movement of 23 contributing structures to a National Register historic district.
- Passage through one corner of a National Register historic district.
- Shifting the entrance gate to a National Register property.
- Movement of a National Register property to another location.
- Small amount of land required from a public open space area.
- Small amount of land from two public parks.
- Rerouting of a bike path that also comes under Section 6(f) regulations.

Avoidance alternatives were examined for all of these impacts and found to be not feasible and prudent.

Measures to minimize harm to cultural resources have been incorporated into the project plans in accordance with a Memorandum of Agreement between FHWA, the Iowa SHPO and the Advisory Council on Historic Preservation. Measures to minimize harm to park resources were developed and incorporated into the project in consultation with the Des Moines Park and Recreation Board, the U.S. Department of Interior and Iowa Department of Natural Resources.

TABLE 1  
 SUMMARY OF SECTION 4(f) IMPACTS OF THE  
 MAJOR ALTERNATIVES CONSIDERED

Section 4(f) Impact	Alternative				
	1A	2A	1B	2B	Preferred
Number of National Register Eligible Structures Displaced	5	4	4	3	2
Number of National Register Eligible Contributing Structures Displaced	31	27	31	27	23
Shifts Woodland Cemetery Entrance	Yes	Yes	Yes	Yes	Yes
Intrusion into Northwest Corner of Sherman Hill Historic District	Yes	Yes	Yes	Yes	Yes
Requires Movement of One National Register Property	Yes	Yes	Yes	Yes	Yes
Requires 1.2 Acres From the River Front Open Space Areas	Yes	Yes	Yes	Yes	Yes
Requires .3 Acre From Sam Cohen Park	Yes	Yes	Yes	Yes	Yes
Requires .8 Acre From Riverside Park	Yes	Yes	Yes	Yes	Yes
Land Required From Hawthorn Park	.1 Ac.	.1 Ac.	.1 Ac.	.1 Ac.	0
Land Required From Chamberlain Park	50 Ft <sup>2</sup>	0	50 Ft <sup>2</sup>	0	0

## SECTION 2

### DESCRIPTION OF ACTION

#### Description of Proposed Action

This project proposes the construction of a four- to six-lane, divided highway (Figure 1). The project has two major segments, a north-south segment and an east-west segment. The north-south segment would begin at the existing Harding Road and 19th Street overpasses of Interstate 235 and extend along the Harding Road corridor to Fleur Drive (approximately 1.5 miles). The east-west segment would intersect with the north-south segment near the Raccoon River and proceed to the east along the existing corridors of Market Street, Elm Street, Raccoon Street and Scott Street (approximately 2.9 miles) to the end of the project in the vicinity of S.E. 14th Street (U.S. Highways 65 and 69). The project also includes connections to Fleur Drive, 15th Street, Indianola Avenue and E. 15th Street. The proposed alignment is more fully described in Section 3 of the Final EIS (pp. 3.4-3.8) and illustrated in Appendix C of that document.

#### Purpose of Proposed Action

Segments of the proposed action have been part of the transportation plan for the city of Des Moines for a number of years. Planning reports since the 1930s have indicated the need for a major arterial in this corridor. This general corridor is also recognized in the 2000 Land Use Plan for the city of Des Moines (Des Moines Plan and Zoning Commission, March, 1986).

The purpose of the proposed action is to improve the flow of traffic through and within the central portions of the city. Namely, the following improvements would be included:

1. To carry east-west through traffic around, rather than through, the Central Business District.
2. To improve accessibility to the Des Moines Airport from Interstate 235 and other areas of the city.
3. To improve traffic flow between the downtown areas and the rapidly developing southeastern parts of the city.
4. To provide better traffic service to and enhance redevelopment of the central city industrial areas.

Existing roadways are currently congested in several areas of the city in the vicinity of the proposed action. Areas include:



1. Near Des Moines Technical High School in the vicinity of Fleur Drive, Locust Street, Grand Avenue, 18th Street and 19th Street.
2. The intersections of Indianola Avenue with S.W. Seventh Street and S.E. First Street.
3. The intersection of S.E. 14th Street with Maury Street.

The proposed action will alleviate the congestion at these intersections and will provide improved traffic flow through the project corridor. Traffic safety and air quality will be improved as a result of the project. Section 2 of the Final EIS more fully discusses the need for this project.

#### Alternatives Considered

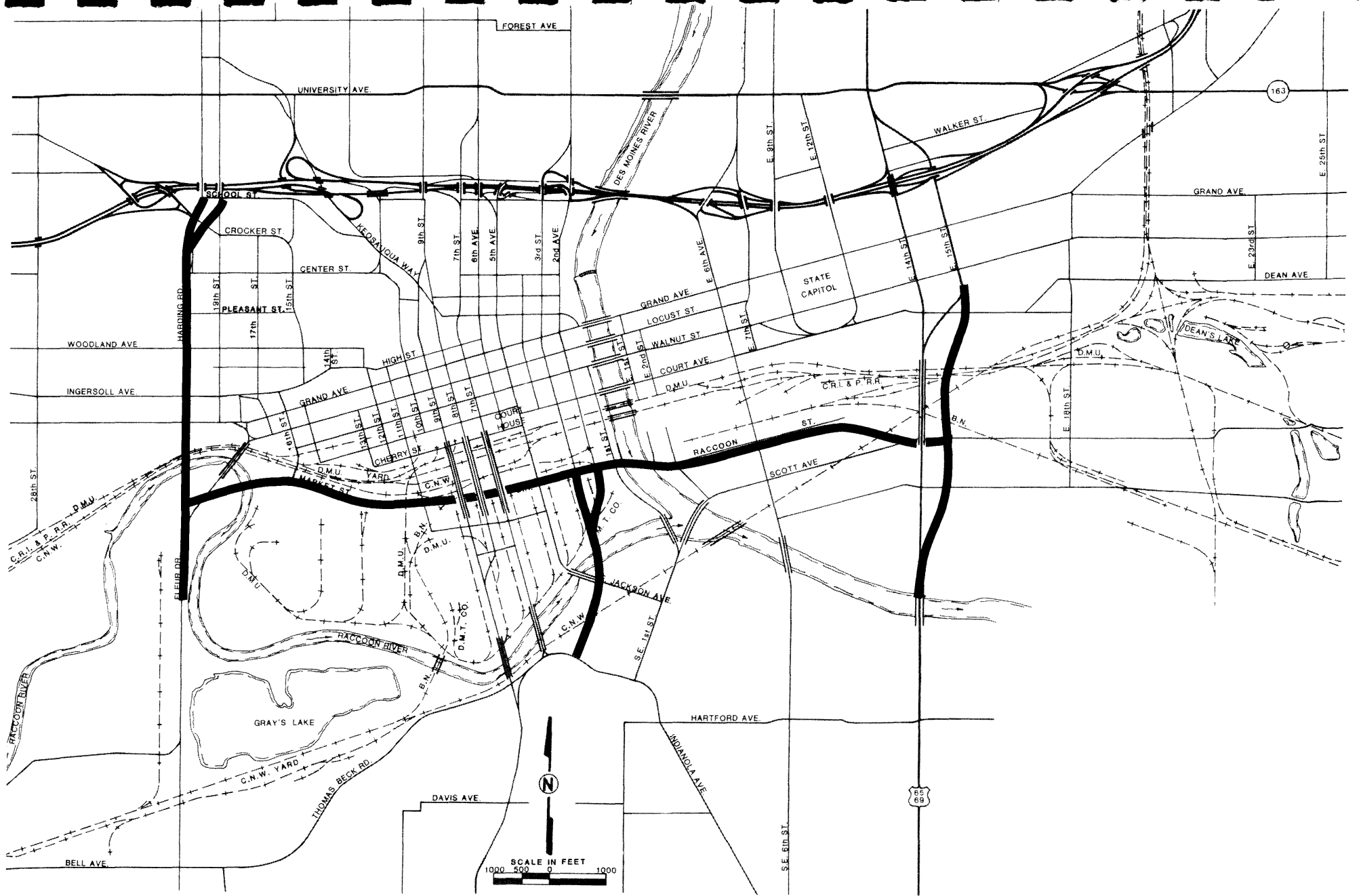
Numerous alternatives have been considered during the development of this project. Because of the many constraints in this highly urbanized project corridor, including CBD development, the State Capitol complex, etc., only a few alignments and minor variations on these alignments were feasible to consider in depth.

The 1983 Draft EIS for this project describes the four construction alternatives that were fully evaluated (Alternatives 1A, 1B, 2A and 2B). These alternatives were all on the same alignment, with the following two exceptions. In the far western end of the corridor, the two A alternatives would pass through a commercial area, while the two B alternatives would pass .2 mile further to the south through an industrial and open space area. The only other difference between the alternatives was at the intersection of a major street (Ingersoll Avenue). Here, Alternatives 1A and 1B would have an interchange, while Alternatives 2A and 2B would have an intersection. These alternatives are described in Section 3 of the Final EIS and illustrated in Figures 3.1-3.4 and in Appendix D of the Final EIS. Other alternatives that were analyzed and deleted because they did not meet the project need or would have more severe impacts than those under consideration included:

- Fifteen additional new construction alternatives.
- Three street widening alternatives.
- Transportation System Management Alternative.
- No Action Alternative.

After the circulation of the Draft EIS and the location public hearing for the project, five additional alternative variations were analyzed at the request of the Des Moines City Council. A report entitled "Concept Evaluation of Additional Alternates," was submitted to the Des Moines City Council on December 17, 1984. Additional public meetings were held in association with this report. Several other variations were also studied at the request of the Des Moines Water Works.

As a result of these various studies and public inputs, the City Council selected a Preferred Alternative on February 4, 1985. This alternative is a combination of elements of alternatives described in the Draft EIS and the new variations that were subsequently analyzed. This alternative is most similar to Alternative 2B in the Draft EIS, with alignment variations that are further from a historic district and are more compatible with the Water Works' operations than was Alternative 2B.



**FIGURE 1 ALIGNMENT OF PREFERRED ALTERNATIVE**

## SECTION 3

### IMPACTS TO ARCHITECTURAL AND HISTORIC RESOURCES

#### Introduction

During the early planning stages of this project, information was obtained on all properties in the project corridor that were already listed on the National Register of Historic Places. It was found that six such properties occurred in the general project area and included:

Herndon Hall (2000 Grand Avenue)  
Hoyt Sherman Place (1501 Woodland Avenue)  
The Lexington (1721 Pleasant Street)  
Maish House (1623 Center Street)  
Old Southeast Water Trough (S.E. 10th Street and Scott Avenue)  
Sherman Hill Historic District (Between Woodland Avenue, Cottage Grove Avenue, 15th Street and 19th Street)

In accordance with the federal requirements regarding the identification and protection of potentially significant architectural and historic resources, a comprehensive property-by-property survey was undertaken after the right-of-way requirements for the project were established to identify all structures that had potential for being eligible for the National Register of Historic Places. The results of this survey are presented in Appendix Volume III to the Draft EIS, "Cultural Resources of the CBD Loop Arterial, History and Architecture."

Two properties that occur within the project right-of-way were judged to be eligible for the National Register of Historic Places by the State Historic Preservation Officer (SHPO). These are the Capital City Woolen Mills and Clifton Heights United Presbyterian Church. The project also passes through the northwestern edge of the Sherman Hill Historic District. Twenty-three contributing structures located in or adjacent to this district would be displaced by the Preferred Alternative. These are ones that individually do not qualify for the National Register of Historic Places but contribute to the significance of the district. The project also would require the movement of the entrance gate to Woodland Cemetery, another property eligible for the National Register of Historic Places. Although not within the project right-of-way, another National Register property, Old Southeast Water Trough, would be moved as an indirect impact of the project.

The locations of these properties are shown on the aerial plates in Appendix C of the Final EIS. The decimal form number used to identify each property corresponds to the numbering



system used in the survey. This number identifies the property, first by survey tract number and then by property number within that tract. The following paragraphs briefly describe each structure.

### Sherman Hill Historic District

#### Description and Project Impacts

This district is one of Des Moines' oldest residential suburbs and today contains the city's highest concentration of late 19th and early 20th Century residential architecture. The development of Sherman Hill can be traced to 1850 when Hoyt Sherman, Postmaster of Des Moines and brother of General Sherman, purchased a five-acre tract for his home, which is now the major architectural landmark in the area. It is used for a number of public functions. The district and three of its residences are listed on the National Register of Historic Places, and a number of others have been identified as contributing structures. The dwellings range from modest cottages to elegant mansions to apartment houses. The boundaries of this district adjacent to the project alignment are depicted on Plates 1, 2, 3 and 4 in Appendix A. This same area has also recently been declared a local historic district, with similar boundaries, except between Center Street and Woodland Avenue where the local designation extends westward to 20th Street (refer to above plates in Appendix A). There are no plans to expand the National Register district boundaries westward (personal communication, Iowa SHPO, April, 1987).

The Preferred Alternative would pass through approximately 650 feet in the northwest corner of this historic district (Plates 1 and 2, Appendix A). This would result in the isolation of approximately one acre of land in the northwest corner from the remainder of the historic district. This corner contains five structures which would remain after the project is in place. None of these structures were found to be eligible for the National Register of Historic Places, although three of them have been identified as contributing structures (contribute to the significance of the district).

#### Contributing Structures - Sherman Hill Historic District

The Preferred Alternative would displace 23 structures within or adjacent to this historic district which were found to be eligible for the National Register of Historic Places as contributing structures. Seventeen of these structures occur adjacent to the district and six occur within the district. Coordination

with the SHPO has indicated that all of these structures are eligible for the National Register, regardless of their inclusion within the district boundaries.

These structures are identified on Plates 2, 3 and 4 (Appendix A).

1.1 Single-Family Dwelling - 944-19th Street

This house was constructed around 1892. It is located within the Sherman Hill Historic District.

1.2 Single-Family Dwelling - 940-19th Street

This house was constructed around 1900 and is a typical late 19th century Victorian house. It is located within the Sherman Hill Historic District.

1.3 Apartment Building - 934-936 19th Street

This duplex was constructed sometime between 1882 and 1921. It is located within the Sherman Hill Historic District.

1.4 Apartment Building - 924-926 19th Street

This apartment building was constructed between 1905 and 1930. It is located within the Sherman Hill Historic District.

1.13 Apartment Building - 1920 Cottage Grove Avenue

This building was originally used for commercial purposes. It was constructed in 1903.

1.15 Commercial Building - 1909 Cottage Grove Avenue

This structure was built between 1905 and 1915. It is located within the Sherman Hill Historic District.

1.16 Single-Family Dwelling - 1919 Crocker Street

This house was constructed around 1903.

1.18 Single-Family Dwelling - 860 Harding Road

This house was constructed around 1892.

1.19 Single-Family Dwelling - 856 Harding Road

This house was constructed in 1918.

1.20 Single-Family Dwelling - 836 Harding Road

This house was constructed around 1900.

1.21 Single-Family Dwelling - 832 Harding Road

This house was constructed around 1889.

1.22 Single-Family Dwelling - 828 Harding Road

This house was constructed around 1890.

1.23 Single-Family Dwelling - 814 Harding Road

This house was constructed around 1890.

1.24 Single-Family Dwelling - 810 Harding Road

This house was constructed around 1890.

1.26 Single-Family Dwelling - 1936 Crocker Street

This house was constructed around 1888.

1.27 Single-Family Dwelling - 855 Harding Road

This house was constructed around 1885.

1.28 Single-Family Dwelling - 835 Harding Road

This house was constructed around 1914.

1.29 Single-Family Dwelling - 2005 Leyner Street

This house was constructed in the 1890s.

1.30 Single-Family Dwelling - 2008 Leyner Street

This house was constructed around 1883.

1.31 Single-Family Dwelling - 2004 Leyner Street

This house was constructed around 1889.

1.39 Single Family Dwelling - 2019 Woodland Avenue

This house was constructed around 1889.

1.40 Single-Family Dwelling - 2015 Woodland Avenue

This house was constructed around 1888.

1.46 Commercial Building - 1905-1907 Cottage Grove Avenue

This structure was constructed around 1910. It is located within the Sherman Hill Historic District.

Avoidance Alternatives

All new construction alternatives that were examined in depth would have passed through some part of the Sherman Hill Historic District and displaced some of the contributing structures for this district. These alternatives include 1A, 1B, 2A, 2B, C and D. Likewise, all of the construction alternatives that were partially evaluated and deleted because they did not meet the project need or because of more severe impacts than the Preferred Alternative would have impacted the Sherman Hill Historic District. These are illustrated in Figure 3.7 of the Final EIS and include Alternatives 1, 2, 3, 4, 6, 8, 10 and 11.

Because the major purpose of this segment of the CBD Loop Arterial is to provide a direct connection between the north-western area of the city (including I-235) and Fleur Drive, an alignment in the vicinity of Harding Road was necessary. Any alignment between 15th Street and 20th Street would have passed through some part of the district, and any alignment between 20th Street and Harding Road would have displaced contributing structures to the district. Another National Register property (Woodland Cemetery) is located between Harding Road and 24th Street (refer to Plate 1, Appendix A).

Thus, an alignment that would avoid all Section 4(f) resources in this corridor would have to be located essentially west of 24th Street or east of 15th Street. Either of these locations would also have to interchange with I-235 using existing connections at Cottage Grove or 31st Street (for a western alignment) or Keosauqua Way (for an eastern alignment). Neither of the existing interchanges at Cottage Grove Avenue or at 31st Street are located to adequately serve traffic generated by the corridor along the existing Harding Road/19th Street corridor to the north of I-235. The use of either of these interchanges would require a portion of the traffic generated to travel out-of-direction routes to the west, resulting in additional vehicle-miles of travel and increased associated costs. The Cottage Grove connection would still involve some impacts to the district and its contributing structures. The 31st Street connection would be located too far from the corridor to make a direct connection with Fleur Drive and would result in traffic congestion at the Fleur Drive-Grand Avenue area very similar to what now



exists. In addition, this connection to I-235 would require modification of the existing overpasses and ramps. South of I-235, 31st Street is located west of and adjacent to Smouse Opportunity School, while to the north of I-235 it is located west and adjacent to Drake University. Thirty-first Street would route traffic to Ingersoll Avenue and Grand Avenue, thereby increasing traffic congestion on these two arteries between 31st Street and the 18th Street/Locust Street area. No direct connection is possible between 31st Street in the vicinity of Grand Avenue and Fleur Drive, thereby resulting in increased congestion in the 18th Street/Locust Street vicinity. The routing of traffic along 31st Street would require its widening, with adverse impacts being expected on existing residential properties and to commercial properties along Ingersoll Avenue and Grand Avenue. It is estimated that improvements to 31st Street, Ingersoll Avenue and the I-235 interchange for this alternative will cost in excess of \$10 million to construct.

The routing of Harding Road corridor traffic easterly to Keosauqua Way and its interchange with I-235 would result in additional traffic being funneled into the downtown area. It is not economically or socially feasible to provide a transportation corridor from the Keosauqua Way interchange at I-235 to Fleur Drive due to the highly developed area in this vicinity, which includes the Iowa Methodist Hospital, federally funded low-income housing areas, commercial developments and other high density/high use facilities. It is estimated that it would cost in excess of \$30 million to provide a new transportation artery from the Keosauqua Way/I-235 interchange to Fleur Drive, which would include the construction of roadway and interchange facilities and right-of-way and relocation costs.

A more reasonable solution would be to modify the overpasses and ramp connection at I-235 for the Preferred Alternative to allow the eastern leg of the one-way couplet to be moved westward, thus avoiding passage through the historic district. This alternative would necessitate the construction of a new overpass over I-235 and the relocation of approximately 500 feet of 19th Street to the north of Day Street on new alignment, the latter resulting in the need to acquire approximately eight residential properties and the relocation of the existing residents. It is estimated that this alternative will increase the cost of the arterial by approximately \$2.5 million. This alternative would not eliminate the need to displace at least 21 of the contributing structures to the historic district that are located outside the district boundaries and east of Harding Road. The provision of noise walls on the east side of the proposed action between Crocker Street and Woodland Avenue would result in the displacement of additional contributing structures.

Three street widening alternatives were also examined that would have widened existing streets to accommodate projected traffic rather than providing a new roadway. Because many of the traffic deficiencies were in this north-south segment, several streets within the historic district would need to be widened, including:

1. 19th Street, Center Street to I-235.
2. Crocker Street, 19th Street to 16th Street.
3. Center Street, 19th Street to Harding Road.

These widenings would require the removal of sidewalks, on-street parking, landscaping and, in some cases, buildings. In addition, they would have resulted in the routing of increased traffic through the district with attendant traffic noise, congestion, pedestrian impacts, etc. These alternatives would also have required the widening of Harding Road between Center Street and Woodland Avenue, with impacts on Woodland Cemetery and contributing structures very similar to those of the Preferred Alternative. These alternatives are illustrated in Figures 3.8-3.10 in the Final EIS and discussed on pages 3.28-3.34.

The No Action Alternative was also examined and would have avoided direct impacts to the historic district (refer to pages 3.14-3.15 in the Final EIS). This alternative was rejected because it would not meet the needs of the project and would result in increased traffic congestion and accidents on many local streets. These include residential streets within the Sherman Hill Historic District. Projected traffic volumes indicated that streets within the district would experience increases in traffic of up to 3,000 vehicles per day more for the No Action alternative as compared with the Preferred Alternative (refer to Table A.1, Appendix A, of the Final EIS).

The Preferred Alternative in this segment was selected because it was the furthest removed from the the historic district and impacted fewer contributing structures than did the other alternatives that were considered in depth (Alternatives 1A, 2A, 1B, 2B).

#### Measures to Minimize Harm

Throughout the planning for this project, coordination was maintained with the Iowa SHPO, the Sherman Hill Neighborhood Association, Inc., and the Des Moines Historic District Commission regarding impacts to this district. Early in the project, many alternatives were dropped which would have passed through more of this district and had considerably more impact on the district. As a result of this coordination, mitigation was developed for this impact to the district, including:



- ° A landscaped buffer area along the eastern edge of the roadway adjacent to the Sherman Hill Historic District, with landscaping and grading to be developed in consultation with the Iowa SHPO and the Des Moines Historic Preservation Commission.
- ° Recording of all National Register eligible properties according to HABS/HAER standards.
- ° Provisions to make these National Register eligible properties available for public purchase and relocation into the Sherman Hill Historic District or other sites approved by the Iowa SHPO.

These measures are specified in the Memorandum of Agreement for the project (Appendix B).

Several design modifications are included in the Preferred Alternative which will reduce the overall impacts to the historic district and contributing structures. These include:

- ° A shift of the alignment from 30 to 110 feet to the west between Pleasant Street and Woodland Avenue to be further away from the boundary of the historic district (compare Plates 3 and 4, Appendix D, with Plate 3 in Appendix C of the Final EIS).
- ° An intersection solution rather than an interchange solution at Ingersoll Avenue (compare Plate 3, Appendix C, and Plate 5, Appendix D, in the Final EIS).
- ° An at-grade intersection rather than an underpass at Woodland Avenue (compare Plate 3, Appendix C, with Plate 4, Appendix D in the Final EIS).

All of these modifications were selected in response to comments from the Sherman Hill neighborhood representatives and the SHPO's input.

#### Conclusion

Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the passage through the Sherman Hill Historic District and that the proposed action includes all possible planning to minimize harm to Sherman Hill Historic District resulting from such use.

## Woodland Cemetery (1.25)

### Description and Project Impacts

Woodland Cemetery was designed in 1864 by Civil Engineer J. B. Bausman to be a rural, romantic cemetery. Its design reflects principles of romantic cemetery design: lush greenery; uneven, rolling topography; a variety of elaborate monuments; and narrow, curving lanes. The cemetery is large enough and with sufficient tree cover to create the impression of isolation from the surrounding urban area. Some of the city's most influential and historically significant residents are interred at Woodland. This cemetery was designated a local landmark in late 1985 by the City Council of Des Moines and identified as having potential for eligibility to the national Register by the architectural/historical survey for this project.

The proposed project would be located to the east of this cemetery within the existing Harding Road right-of-way (Plates 1, 2, 3, and 4, Appendix A). To improve safety at the intersection of the project and Woodland Avenue, the entrance to the cemetery would be relocated to the west at a point about 50 feet from its current location. No net loss in property would occur at this site (Plate 4, Appendix A). The relocation of this entrance should be accomplished to improve capacity and safety of this intersection regardless of whether or not the proposed project is constructed. A separate project to relocate the entrance gate could be advanced under the programmatic Section 4(f) which was approved for minor involvement with historic sites.

### Avoidance Alternatives

Early in the planning for this project, Alternative 10 (15th Street Alternative) was examined (refer to Section 3 and Figure 3.7 in the Final EIS). This alternative would have avoided impacts to Woodland Cemetery but would have cut through a large part of the Sherman Hill Historic District. It would also have separated a school and open space area from a residential area. This alternative would also have required considerable residential property and increased traffic and noise levels on many residential streets. Because of these impacts, this alternative was strongly opposed by the neighborhood and by the Sherman Hill Neighborhood Association, Inc.

Many of the avoidance alternatives previously discussed for the Sherman Hill Historic District would also apply to Woodland Cemetery. These include: alternatives west of 24th Street or east of 15th Street, Alternative 3, the No Action alternative and Street Widening alternatives. The reasons they were not selected are discussed in this previous section.



In addition, design modifications were considered that would have lessened the impact to Woodland Cemetery. These are present in Alternatives 1A, 1B, 2A and 2B. These alternatives would have been from 30 to 110 feet further from Woodland Cemetery south of Pleasant Street than is the Preferred Alternative. They would also have required that the southeast entrance gate be moved only 12 feet rather than the 50 feet that the Preferred Alternative will require. However, these alternatives would have had greater impacts to the Sherman Hill Historic District and would have required that from 27-31 contributing structures to the historic district be displaced. The Preferred Alternative requires that only 23 of these contributing structures be displaced.

#### Measures to Minimize Harm

Coordination regarding impacts to this cemetery has been maintained with the SHPO and with the Des Moines Park and Recreation Board who manage this property. In accordance with the latter's request, this entrance gate will be reconstructed to appropriate historical and architectural detail and landscaped accordingly (refer to p. B.18 in Appendix B).

Because there have been high accident rates at this location (intersection of Woodland Avenue and Harding Road), it is anticipated that the movement of this entrance away from this intersection will facilitate vehicular entrance and exit from the cemetery.

#### Conclusion

Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the movement of the entrance gate of Woodland Cemetery and that the proposed action includes all possible planning to minimize harm to Woodland Cemetery resulting from such use.

#### Capital City Woolen Mills (5.13) - 113 S.W. Eighth Street

#### Description and Project Impacts

This property occurs within the right-of-way for the project and would be demolished or moved as a result of the project. This complex is identified on Plate 6 in Appendix C of the Final EIS and illustrated in Figure 2. It originally housed the Capital City Woolen Mills. There are five distinct sections to the complex, ranging in age from 1877 to 1970. Part one of the complex was a livery or Wells-Fargo station, according to the present occupants. Part two housed the Capital City Woolen Mills which went into operation in 1882. Parts three and four were

additions to the mill in 1914. Part five was constructed in 1970.

This mill is historically significant for its role in both Jewish immigration to Des Moines and as a major industry in the city. The mill was owned by Abraham and Leopold Sheuerman who were both leaders in the Jewish community. They often aided newly arrived immigrants by giving them jobs at the woolen mill during the period of rapid Jewish settlement of the city (1882-1895).

By 1888 the Capital City Woolen Mill was the sole woolen mill in the city and remained the only one throughout its existence. They employed between 300 and 680 people, depending on the source consulted, and was described as "one of the city's largest manufacturing concerns."

The oldest parts of the building are considered to have some architectural significance as well, although the later additions (in 1914 and 1970) detract from the building's integrity.

#### Avoidance Alternatives

Four construction alternatives were examined that would have avoided the displacement of this structure. These were Alternatives 2, 7, E and F described in the Final EIS, Section 3, and illustrated in Figures 3.7 and 3.11 (Final EIS).

Alternative 2 (Harding Road-Fleur Drive-Raccoon River-Scott Avenue Alternative) was deleted from further consideration because of its adverse impacts on parks, including Water Works Park, Riverside Park, the River Front Development Open Space Areas, Sec Taylor Stadium and Frank Depuydt Woods. It would have had greater impact on all of these parks than would the Preferred Alternative. This alternative would also have had severe impact on the facilities of the Des Moines Water Works and on the Raccoon River flood plain in this area. It would have been inconsistent with the future land-use planning for this area and would not have met several of the major goals of the project, including relieving traffic congestion in the CBD area.

Alternative 7 (Tuttle Street Alternative) was deleted from further consideration because it would have crossed numerous railroad tracks between the Raccoon River and S.W. Ninth Street. The numerous at-grade crossings would greatly reduce safety and traffic movements, and the cost of overpassing all of these tracks would be prohibitive. In addition, this alternative would have required nearly all the land from Riverside Park.



Alternative E (Mulberry and Cherry Street Extensions to 15th Street) was not selected because of its severe impact on commercial properties and its inconsistency with future land-use planning and revitalization plans for the CBD area. It would not relieve traffic congestion in the CBD and would not serve the industrial area to the south, two of the major purposes of the project. This alternative would also have displaced a National Register eligible property at 1440 Locust (Apperson Iowa Motor Company).

Alternative F (16th Street/Cherry Street and 15th Street/Mulberry Street Connections) was not selected for the same reasons listed for Alternative E. However, it would not displace any National Register eligible properties.

Several variations of the Preferred Alternative which would avoid this structure were also analyzed. One variation would have deleted the ramp connection to S.W. Eighth and S.W. Ninth Streets. This variation was not selected because it would result in increased traffic diversion to S.W. 11th Street, S.W. Fifth Street, S.W. Third Street, S.W. Second Avenue, S.W. First Street, Court Avenue and other CBD streets rather than directing traffic to this one-way couplet. Thus, one of the major goals of the project, reduction of traffic congestion in the CBD, would not be met.

Another variation was examined which would leave the ramp at S.W. Ninth Street but would delete the ramp at S.W. Eighth Street and replace it with a ramp at S.W. Seventh Street. This would avoid the impact to the Capital City Woolen Mills but would provide very poor traffic service in this area, as S.W. Seventh Street is a two-way street between Indianola Avenue and Mulberry Street. This alternative would necessitate the acquisition of buildings on the east side of S.W. Sixth Street between Elm and Market Streets.

A similar alternative which would include the ramps at the S.W. Ninth Street viaduct but delete the ramp at S.W. Eighth Street was also examined. As part of this alternative, traffic on the arterial could use S.W. Fifth Avenue to the north of the arterial to get to the CBD area. Routing of traffic along this street would result in numerous at-grade railroad crossings and street intersections within an existing industrial area for an estimated 3,740 vehicles per day. This alternative would therefore have deficiencies related to traffic safety and accessibility. Traffic could also use S.W. Fifth Avenue south of the arterial and then use Tuttle Street to intersect with S.W. Eighth Street. Westbound traffic would thereby have to turn left onto S.W. Fifth Avenue, cross S.W. Seventh Street at Tuttle Street and then turn right onto S.W. Eighth Street and thereby gain access

to the CBD area via the S.W. Eighth Street viaduct. For westbound traffic on the arterial, this would involve 3,480 vehicles per day to turn left at S.W. Fifth Avenue, across an opposing volume of 6,940 vehicles per day, then cross S.W. Seventh Street which is estimated to carry 4,730 vehicles per day in the future (12,100 existing) and then turn right onto S.W. Eighth Street which is estimated to carry 13,160 vehicles per day. This routing would result in approximately 380,000 vehicle-miles of extra travel per year in lieu of the provision of the ramp at S.W. Eighth Street and is expected to result in numerous accidents due to the routing of traffic across other major traffic routes. This alternative is therefore not feasible because of traffic and safety concerns.

Another alternative was investigated which would provide a loop ramp in the southeasterly quadrant of the junction of the S.W. Eighth Street viaduct and the arterial. This alternative was developed in order to permit westbound traffic on the arterial to turn left in the vicinity of the S.W. Seventh Street viaduct and then proceed via a 90-foot radius, 20 mph clockwise curve movement along a loop ramp to gain access onto the existing northbound, one-way S.W. Eighth Street viaduct. Due to the presence of S.W. Seventh Street viaduct piers in the vicinity of the arterial, the development of a left-turn lane for westbound left-turning traffic would result in unconventional and potentially dangerous traffic movements. The loop ramp itself would be very close to the west side of the S.W. Seventh Street viaduct between Elm Street and Tuttle Street, resulting in insufficient horizontal clearances between the two roadways. In addition, this alternative would require the acquisition of two industrial buildings at a cost in excess of \$500,000, including relocation assistance. This alternative would not accommodate the transfer of northbound traffic on S.W. Eighth Street to the arterial due to the restrictions imposed by the presence of the two viaducts. Had this alternative been feasible, a ramp could have been constructed so as to avoid the Capital City Woolen Mills site.

In addition, the No Action alternative and three Street Widening alternatives were examined and found to be inadequate to meet the project need. These were discussed under a previous section on the Sherman Hill Historic District.

#### Measures to Minimize Harm

A Memorandum of Agreement has been developed for the project which provides for the documentation of this structure and the opportunity for relocation to a site approved by the Iowa SHPO (refer to Appendix B).



## Conclusion

Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the use of the Capital City Woolen Mills and that the proposed action includes all possible planning to minimize harm to the Capital City Woolen Mills resulting from such use.

### Clifton Heights United Presbyterian Church (7.14) - 1218 Indianola Avenue

#### Description and Project Impacts

This church, built in 1923, is a highly distinctive example of church architecture of the 1920s (refer to Plate 8, Appendix C of the Final EIS, and Figure 2). It is the third church the congregation built. It is the primary reminder of settlement in the area that dates to at least 1879, the year the congregation first organized as the Presbyterian Church of South Des Moines. Settlement in this area was greatly accelerated in 1887 when the Clifton Heights Land Company bought and began developing large tracts in the area. The presence of a Presbyterian Church indicates that the area has not always been an exclusively Italian enclave.

The church currently includes over 200 families in its congregation. These members come from throughout the city rather than the local neighborhood.

The proposed project would result in the demolition or movement of this structure.

#### Avoidance Alternatives

Three alternatives were examined that would have avoided the displacement of this structure. These were Alternatives I-1, I-2 and Alternative G described in Section 3 of the Final EIS and illustrated in Figures 3.7 and 3.11 (Final EIS).

Alternative I-1 (S.E. First Street Alternative) was deleted from consideration because it would require property from Columbus Park, a major neighborhood park; would displace a number of residential and commercial properties; would have negative impacts on existing residential land use in the area; and would require more property from Riverside Park than would the Preferred Alternative.

Alternative I-2 (S.W. First-S.E. First Street Alternative) was deleted because it would isolate a large residential area

between two one-way roadways; would require land from Columbus Park; would have negative impacts on pedestrian and school pedestrian traffic; and would have noise and other negative impacts on residential land use.

Alternative G (S.W. First/S.E. First Street Connection to Indianola Avenue) was examined in depth. It was found to have much more disruptive effects on the neighborhood than would the Preferred Alternative. It would displace 12 single-family dwellings (compared to five for the Preferred Alternative) and create a barrier in the midst of this well-established Italian neighborhood. In contrast, the Preferred Alternative would pass on the western edge of this neighborhood and serve to buffer it from the industrial area to the west. Besides the loss of homes along S.E. First Street, a number of homes would remain that would lose yard space, landscaping and parking and be exposed to increased traffic and noise levels. Pedestrian crossings to the west to St. Anthony's Catholic Church and School would be more difficult. Likewise, pedestrian crossings to the east and to Columbus Park would be hampered by this alternative.

This alternative would also have displaced 11 commercial structures (compared to five for the Preferred Alternative) and the headquarters building for two Italian benevolent organizations (Stemma D'Italia and Garibaldi Society). This headquarters building has been identified in the city-wide architectural survey as being a possible candidate for the National Register of Historic Places. This alternative would have more negative impacts on the archaeological and historic resources associated with Archaeological Site 13PK61 (described later in this statement). It would also require the moving of the cabin in Riverside Park which serves as a monument to the early settlement of Des Moines. It would require more land from this park than would the Preferred Alternative and would remove part of the parking lot for Sec Taylor Stadium.

Another alternative that was preliminarily analyzed involved routing the four-lane segment of the proposed Indianola Avenue connection to the west of S.W. Second Street in the vicinity of its junction with Indianola Avenue. The reason this alternative was developed was to shift to the west the pavement width transition area that is needed to the east of the intersection. In effect, this results in providing the narrowest possible pavement width at the location of the two churches. As a result of this alternative, the clear distance from curb to each church is approximately 12 feet, which distance is deficient relative to safety for this type of roadway. Furthermore, the project would require the acquisition of one or more major industries that are located on the west side of S.W. Second Street. This alternative is therefore not feasible or prudent.



The best alignment variation that would meet the project need and avoid the displacement of the Presbyterian Church was considered which would move the project further to the north in the vicinity of the S.E. First Street intersection. However, it would require relocating St. Anthony's Catholic Church. This church is an integral part of the surrounding Italian neighborhood and is a focal point for community activities. It was built in 1906 at about the same time that a number of Italian families began to settle here and has served as the focal point of Italian culture in the area ever since. It serves over 2,000 members and consists of the church and adjacent school. The displacement of St. Anthony's Church and school would result in disruption of extraordinary magnitude to this community. Therefore, for this reason, shifting the alignment to the north to avoid the Presbyterian Church is not feasible and prudent.

#### Measures to Minimize Harm

A Memorandum of Agreement has been developed for the project which provides for the documentation of this structure and the opportunity for relocation to an eligible historic district within the city (refer to Appendix B).

#### Conclusion

Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the use of the Clifton Heights United Presbyterian Church and that the proposed action includes all possible planning to minimize harm to the Clifton Heights United Presbyterian Church resulting from such use.

#### Old Southeast Water Trough (8.27) - S.E. 11th Street and Scott Avenue

#### Description and Project Impacts

This is a six-foot granite structure composed of a rectangular shaft, a bowl about six feet across and four small cups at the base. It was erected in 1906 at this site by the Des Moines Humane Society. It is an artifact from an earlier period of public utilities technology, before indoor plumbing and the exclusive use of motorized transportation. A small pipe filled the circular trough and served as a drinking fountain for people; the large bowl was for horses and the small cups for cats and dogs. Originally, there were 15 such troughs in various parts of the city, and this is the only one that remains. It is located within the street right-of-way for Scott Avenue and is part of Sam Cohen Park (refer to Plate 11, Appendix A, for location). It is listed both on the National Register of Historic Places (since, 1976) and as a Des Moines Local Landmark (since, 1985).

The CBD Loop Arterial project would not directly impact this structure. However, the Des Moines Park and Recreation Board has requested that Sam Cohen Park and its related facilities be moved to another location to avoid the visual and noise impacts from the CBD Loop Arterial project (refer to their letter in Appendix B). This will include the movement of the water trough. This move will automatically result in the structure being removed from the National Register of Historic Places. Discussions with the Iowa SHPO have indicated that this structure may be reinstated to the National Register after the move if certain conditions are met. The new location, site plan and movement procedures must be submitted to the SHPO and National Park Service. These agencies will determine if the structure still retains its architectural and/or historic significance at the new location. If so, it may be reinstated to the National Register. In either case, the structure will remain a Des Moines Local Landmark after the move.

#### Avoidance Alternatives

Several avoidance alternatives that would not require the relocation of Sam Cohen Park were examined. These are discussed in the subsequent Section 5 "Impacts to Parks and Open Space Areas."

#### Measures to Minimize Harm

Prior to its relocation, this structure will be documented in accordance with HABS/HAER standards. Because it will remain within the same neighborhood in a similar context, it is anticipated that the structure will continue to serve the same functions that it now does.

#### Conclusion

Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the relocation of the Old Southeast Water Trough and that the proposed action includes all possible planning to minimize harm to this structure resulting from such relocation.

#### Additional Impacts of Other Alternatives

The Preferred Alternative would not impact the following structures, although they would have been displaced by either Alternatives A or B. The SHPO has determined that the Preferred Alternative would not intrude upon or have other secondary impacts to these structures.



Hillside Apartments (2A.2) - 1902 Woodland Avenue

This structure would be displaced by Alternatives 1A and 1B (Plates 3 and 5, Appendix D, Final EIS). The Preferred Alternative would be located approximately 500 feet to the west of this structure. It is a brick apartment building that was constructed around 1910. It is a good example of early apartment architecture and is well preserved. It represents a combination of Georgian and late Italian neoclassical style.

Apperson Iowa Motor Company (2A.18) -  
1440 Locust

This structure would be displaced by Alternatives 1A and 2A (Plate 9, Appendix D, Final EIS). The Preferred Alternative would be located approximately 700 feet to the south of this structure. This building is considered to be architecturally significant as an example of a commercial structure of the period that was built specifically to house the new automobile trade. The address is first listed in 1919; and in 1920, the Apperson Iowa Motor Car Company and the Iowa Truck and Tractor Company were installed in the building. A. C. Miller was president of the firm which distributed Sterling, Rainier, Apex and Packard trucks, Yankee tractors, and Elgin and Studebaker motor cars. The structure is one of the many in this area that comprised the first area devoted to motor car sales in Des Moines.

Great Western Insurance Company (3.9) -  
2015 Grand Avenue

This structure would be displaced by Alternatives 1A, 2A, 1B and 2B (Plates 3-6, Appendix D, Final EIS). The Preferred Alternative would be located approximately 100 feet to the west of this structure. Built around 1928, this structure was the second home office for Great Western Insurance Company, an accident insurance company. Henry Brown Hawley founded the company in 1901. It was one of the first successful health and accident insurance companies in the state. Hawley was known as the "Dean of Iowa accident insurance men." Also a philanthropist, he established the Hawley Welfare Foundation for constructive welfare work and research.

The structure is also architecturally significant with its classical detail, moorish-type window arches and other features. It is a good example of architecture from the 1920s that combines the requirements of a modern office with subtle references to classical design.

Contributing Structures - Sherman  
Hill Historic District

These structures occur within or adjacent to the Sherman Hill Historic District and contribute to the significance of this district. They consist of eight residential structures located along High Street, Woodland Avenue and 20th Street. Four of the structures would be displaced by Alternatives 2A and 2B. All of these would be displaced by Alternatives 1A and 1B. The Preferred Alternative would not displace these structures.

Comparison of Alternatives

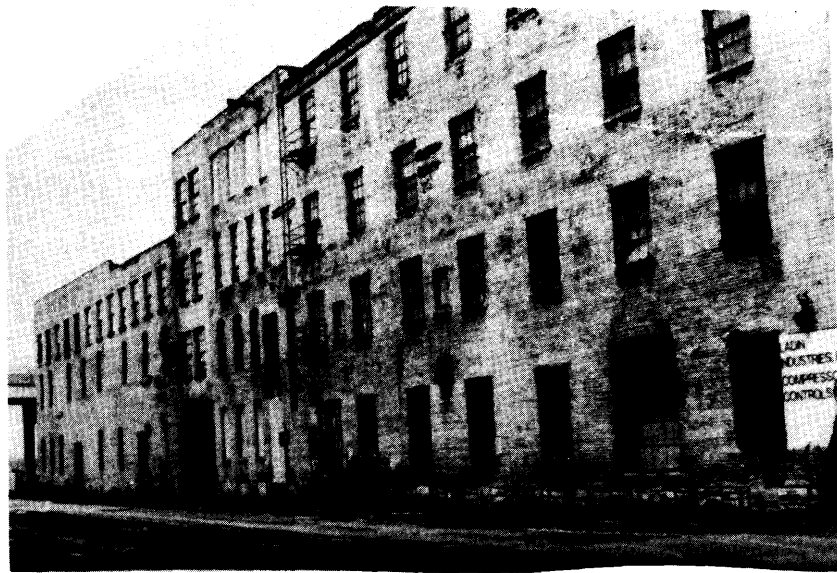
All of the other construction alternatives would have greater impact to historic and architectural resources than would the Preferred Alternative. Table 2 compares the impacts of these alternatives.

TABLE 2

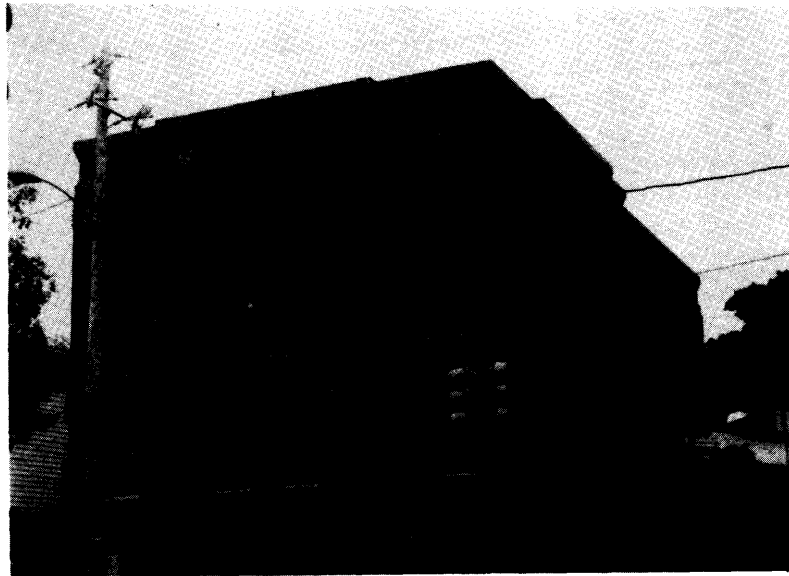
IMPACTS TO SIGNIFICANT HISTORIC/ARCHITECTURAL  
STRUCTURES BY THE VARIOUS ALTERNATIVES OF  
THE CBD LOOP ARTERIAL

Structure	Alternative					Preferred Alternative
	1A	2A	1B	2B		
1. Hillside Apartments 1902 Woodland Avenue	X		X			
2. Apperson Iowa Motor Company 1440 Locust	X	X				
3. Great Western Insurance Company 2015 Grand Avenue	X	X	X	X		
4. Capital City Woolen Mills 113 S.W. Eighth	X	X	X	X		X
5. Clifton Heights United Presbyterian Church 1218 Indianola Avenue	X	X	X	X		X
6. Contributing Structures to Sherman Hill Historic District	31	27	31	27		23
7. Woodland Cemetery Gate Corner of Woodland and Harding Road	*	*	*	*		*
8. Old Southeast Water Trough Corner of Scott Avenue and S.E. 11th Street	*	*	*	*		*

\*-Indicates that the structure would be within the right-of-way of the alternative but would be moved as part of the project.



**SITE 5.13 113 S.W. EIGHTH STREET**



**SITE 7.14 1218 INDIANOLA ROAD**

**FIGURE 2  
PROPERTIES WITHIN THE CBD LOOP RIGHT-OF-WAY  
THAT ARE ELIGIBLE FOR  
THE NATIONAL REGISTER OF HISTORIC PLACES**



## SECTION 4

### IMPACTS TO ARCHAEOLOGICAL RESOURCES

#### Introduction

Although the majority of the project corridor is urbanized, an archaeological study was warranted because of the historic and prehistoric occupations that were known to occur in the area. A Phase I Cultural Resources Survey was conducted in 1982, and indicated the need for further investigations. A Phase II study was conducted in 1985.

These studies revealed that there was a large archaeological site, Site 13PK61, in the project area that was eligible for the National Register of Historic Places. Precise boundaries of this site cannot be confirmed until the completion of all archaeological testing after the right-of-way is acquired. For the purposes of the National Register determination of eligibility, they were defined as: between Fifth Street and the Des Moines river for the east-west boundaries, between Walnut Street and the northern half of Riverside Park for the north-south boundaries on the east, and between Vine Street and Elm Street for the north-south boundaries on the west (refer to Figure 3). This site was determined eligible by the Keeper of the National Register in a notification dated April 9, 1986 (in Appendix B). The site was determined to be eligible for data recovery but not for preservation in place. Therefore, under current FHWA policy, it does not require Section 4(f) protection. However, Section 106 procedures and 36 CFR 800 regulations will be adhered to during project development. This site consists of three components which are discussed in the following sections.

#### Fort Des Moines No. 2

Fort Des Moines No. 2 was a frontier military post occupied from 1843-1846. The fort was established to protect the Sauk and Fox (Mesquakie) from white settlers trying to claim lands ceded to the Indians. The fort was the first settlement in central Iowa and, after abandonment, became the nucleus of the city of Des Moines, which in 1855 became the capitol of Iowa. No standing structures of the fort remain and it had long been assumed that it was totally obliterated by the ensuing urbanization of Des Moines.

The CBD Loop Arterial archaeological study concentrated on the area that was known to be the site of old Fort Des Moines (Fort Des Moines No. 2) and the site of early Des Moines. The objectives were to determine the potential for remains of the Fort and early Des Moines to be preserved in the vicinity of the proposed highway alignment.

There was conflicting information regarding specific building locations within the Fort. However, synthesizing various lines of evidence, a layout for the Fort was developed during the course of this study. Assuming this plan of the Fort is the accurate one, the remains of a row of barracks (Raccoon Row) and several other structures would have occurred near the project alignment in the vicinity of Elm Street between Sixth Street and First Street (refer to Figure 3 and Plate 8, Appendix A).

Subsurface investigations were conducted in this area in the Phase I study to determine if the original land surface on which the Fort had stood still remained beneath the fill that had been deposited there over the years. The upper layer (A horizon) of the original soil surface was found to be present, occurring at varying depths from 1.7 feet to 6.6 feet below the existing ground surface. On the basis of this finding, it was concluded that there was a good possibility for building foundations, floors and other remains of the Fort to still be preserved beneath the fill.

The Phase II study uncovered the remains of a hearth that occurred at the predicted location of one of the Fort buildings and it was dated by geomorphological evidence to pre-1851, strongly suggesting that it was part of a Fort building. Other buried historic materials were uncovered during the study, indicating the potential for intact historic deposits to occur throughout this area. The SHPO determined that this study clearly established that remains of the Fort occurred in the CBD Loop Arterial project corridor (refer to January 22, 1986, letter in Appendix B).

#### Old City Dump

During the Phase I study of the Fort Des Moines area, an old city dump was discovered buried beneath about 6-1/2 feet of fill material. This dump was encountered in Riverside Park (Plate 8, Appendix A). Historical records research and remote sensing work conducted during the Phase II study indicated that the size of the old dump could be quite extensive, extending perhaps between S.W. First and S.W. Third Streets and between Elm Street and the Raccoon River.

Artifacts from the Riverside Park portion of the dump were collected and analyzed during the Phase II study. These dated primarily to the 1910s to 1920s. However, because of its location adjacent to the Fort area and the first settlement of the city, it is thought that parts of the dump could harbor artifacts dating to the 1840s and have cultural significance.

## Prehistoric Resources

The geomorphology of the area was studied during Phases I and II to assess the potential for prehistoric cultural material to occur here. The landscape history and the soil profiles in the project area were evaluated. Of particular interest were buried land surfaces which could have been occupied by humans, as many of the prehistoric sites in this region of Iowa occur in buried paleosols (ancient soils). Thus, the geomorphic study attempted to determine if such paleosols occur in the project area and if they dated from a time period when prehistoric Indians occupied this region of Iowa. Many locations on the terraces above the Raccoon and Des Moines rivers were studied. This study identified only one area in the project alignment that would have the potential to contain prehistoric sites. This was in the vicinity of Riverside Park in the same area where the Fort and old dump occur. Phase II test units that were dug in this area uncovered prehistoric materials associated with the Oneota period (A.D. 1000 to historic times).

## Project Impacts

The Preferred Alternatives would pass to the south of the predicted locations of the old Fort buildings, except for the commissary building which is predicted to occur near the southwest corner of Elm and S.W. First Streets (see Plate 18, Appendix A). The proposed alignment would pass over this location. A hand-dug trench in this area in Phase II did not uncover any remains of the Fort, however.

The project would lie approximately 300 feet to the south of the hearth structure that was found and is thought to be part of the Fort (Plate 8, Appendix A) and from 10 to 350 feet south of the area predicted to be the location of a row of barracks (Raccoon Row). However, railroad relocation associated with this project would occur along this Raccoon Row location.

The proposed alignment would pass over the old dump site. Both the S.W. Second Street and S.W. Third Street extensions of the project could cross the dump from near Elm Street to the Raccoon River (see Plate 8, Appendix A). The Phase II studies confirmed the existence of the dump in Riverside Park and the potential for it to occur over a much larger area extending from near Elm Street south to the Raccoon River and from S.W. First Street to west of S.W. Third Street (Plate 8, Appendix A). Based on an intermediate size for the dump, the project would be overlying approximately eight percent of this dump.

As the top of the dump was found to be buried beneath 6-1/2 feet of overburden in the vicinity of S.W. Second Street, it is anticipated that the construction of this roadway will not



infringe upon the dump. Roadway construction is anticipated to be no deeper than two feet; associated storm sewers may go four to six feet deep. In the vicinity of S.W. Third Street, however, remote sensing data indicated an overburden layer of from 3-1/2 to 4 feet deep. As no test trenches were dug in this area, the existence of the dump below this overburden has not been verified. If it does occur here, storm sewer construction would be deep enough to infringe upon the dump.

There is potential for prehistoric material to occur beneath the project alignment between S.W. Seventh Street and S.W. First Street. This material would occur in the buried A horizon, which was found to occur from 1.7 to over 5 feet below the existing ground surface. Roadway and storm sewer construction could infringe upon this original soil surface at many locations in this area.

#### Avoidance Alternatives

All alternative alignments that were examined that would meet the traffic needs would have required passing through a corridor in the general vicinity of Elm Street. Any alternatives that would avoid this area would have to be located to the north within the CBD area or to the south of the Raccoon River.

Four alternatives were examined that would pass through the CBD area. These alternatives were Alternatives 2, 7, E and F and were described in Section 3. They were found to be incompatible with the future land-use planning goals and the goals of this project. These goals are to reduce traffic in the CBD area and provide a pedestrian-oriented area. These alternatives would result in increased traffic congestion in the CBD and would not improve accessibility to the downtown industrial area.

An alignment to the south of the Raccoon River was considered but was dropped because it would have been too far removed from the project area to be effective in reducing traffic in the CBD and would not serve the downtown industrial area.

The No Action alternative and three Street Widening alternatives would also have avoided this area but were deleted because they did not meet the project needs. These are further discussed in a previous section on the Sherman Hill Historic District.

An alignment variation was originally considered for this area and was the only alternative described in the 1983 Draft EIS. As a result of the Phase II study, however, the city of Des Moines directed that this alternative be dropped and a new one be developed that was further removed from the predicted location of the Fort buildings. The original alternative was located from 10



to 70 feet to the north of the Preferred Alternative and would have been closer to the predicted locations of the Raccoon Row barracks and to the city dump.

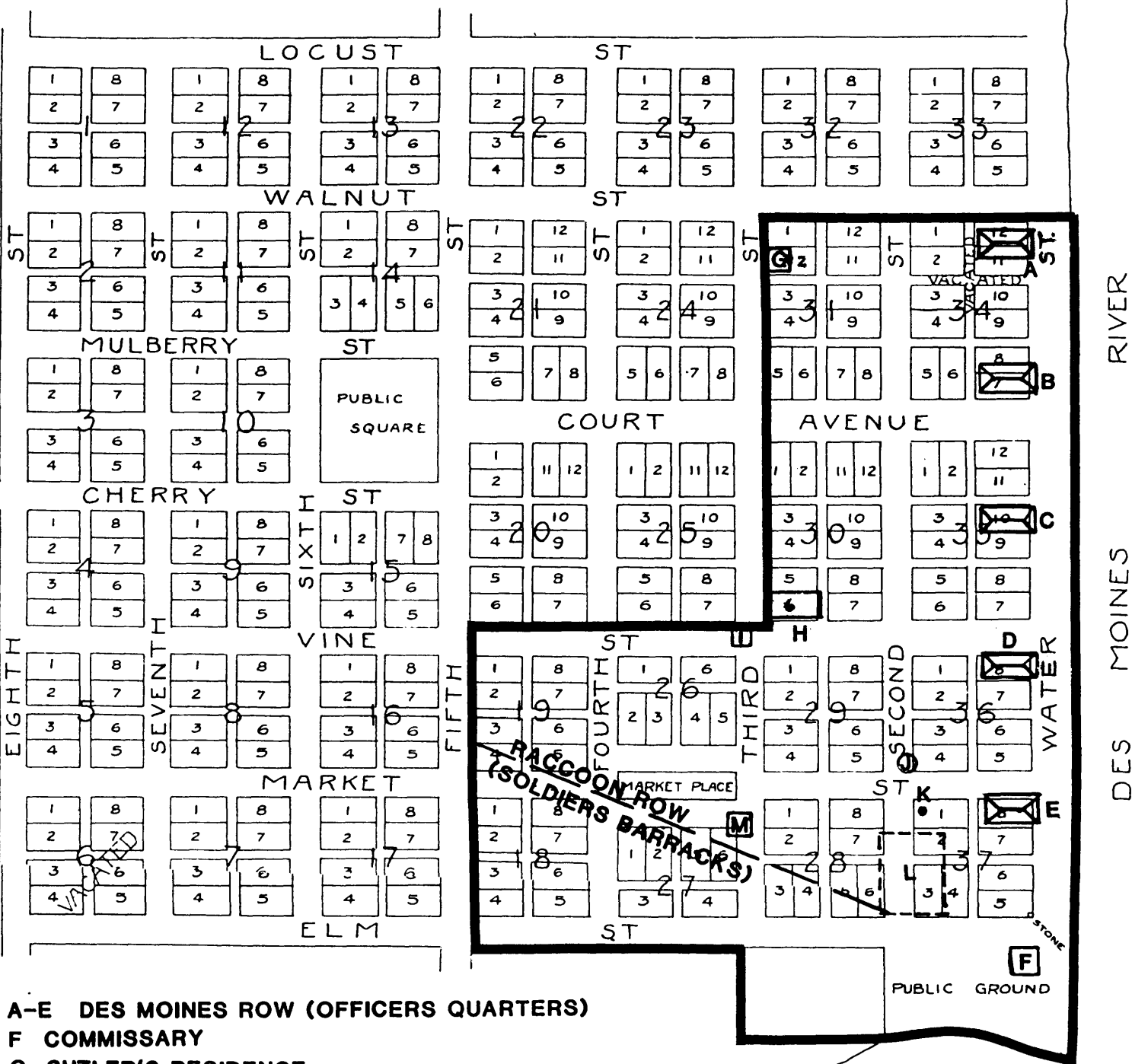
#### Measures to Minimize Harm

A Memorandum of Agreement that specifies mitigative measures for the impacted cultural resources has been developed by FHWA in consultation with the SHPO. It appears in Appendix B. This Memorandum specifies that after right-of-way has been acquired and/or demolition has occurred, additional archaeological testing will be conducted in accordance with the professional standards identified in the Advisory Council's Manual on Mitigation Measures, and in consultation with the Iowa SHPO. If archaeological sites are identified which, in the opinion of the Iowa SHPO, may be eligible for inclusion in the National Register, a data recovery plan will be developed in accordance with the Advisory Council's handbook, Treatment of Archaeological Properties, and in consultation with the Iowa SHPO. Data recovery plans will be forwarded to the Iowa SHPO for review and approval.

#### Conclusion

Because preservation in place has not been required as a condition of the Memorandum of Agreement for this site, the Section 4(f) regulations do not apply. Data recovery in accordance with Section 106 procedures will be followed during project development. Although current investigations have not indicated the potential for any resources that would require preservation in place, this will be continually evaluated with the SHPO as the project progresses.

# FORT DES MOINES



- A-E DES MOINES ROW (OFFICERS QUARTERS)
- F COMMISSARY
- G SUTLER'S RESIDENCE
- H SUTLER'S STORE
- I GUARDHOUSE
- J WELL
- K FLAGSTAFF
- L HEADQUARTERS
- M BLACKSMITH
- NATIONAL REGISTER BOUNDARY

**FIGURE 3. BOUNDARIES OF SITE 13PK61  
(AS APPEARS IN THE DETERMINATION OF ELIGIBILITY  
TO THE NATIONAL REGISTER OF HISTORIC PLACES)**

## SECTION 5

### IMPACTS TO PARKS AND OPEN SPACE AREAS

#### Sam Cohen Park

##### Description

Sam Cohen Park is a one-acre park located on Scott Street between S.E. 10th and S.E. 11th Streets in a residential area. The park is owned by the city of Des Moines and managed by the Des Moines Park and Recreation Board.

The land was acquired by the city in 1978, and the development of a park at this site was approved by the Des Moines City Council in 1979. It was conceived as a minipark to improve the recreation facilities for senior citizens. Through the efforts of the Southeast Neighborhood Priority Board, the park was named after Sam Cohen, a local grocer who was raised in the neighborhood. The park was officially dedicated on June 12, 1981.

The focal point of the park is a structure in the west end which has been placed on the National Register of Historic Places. This is the Old Southeast Water Trough which is described in the preceding section on "Impacts to Architectural and Historic Resources." The Elizabeth Yaw Memorial Planter was constructed in the east end of the park in 1983. The other facilities at the park are benches around the water trough, fencing and landscaping. No off-street parking is provided.

##### Project Impacts

The Preferred Alternative would require the acquisition of approximately 0.3 acre of land from the northeast corner of the park (Plate 11, Appendix A, and Plate 10, Appendix C, Final EIS).

The project will also result in increased noise levels within the park. The park is already subjected to high noise levels during peak traffic hours. The existing Leq noise level was measured to be 61 dBA. With the project in place, this level would be raised to a year 2000 Leq of 66 dBA. This noise level increase is rated as a moderate impact using the FHWA impact rating system.

Pedestrian and vehicular access to the park from the east and north will be adversely affected by the project, although the roadway will connect with S.E. Sixth and Ninth Streets in this area. Because very few residences occur to the east and north of the park, this impact is expected to be minimal. Access from the areas to the south and west of the project will not be affected.

## Avoidance Alternatives

During the preliminary location study for the project, several alignments were considered and eliminated for reasons presented in the following discussion.

Five alternatives were considered which would have avoided impacts to Sam Cohen Park. These are Alternatives 8, 9 and three Street Widening alternatives. Alternative 9 would follow existing Maury Street in the vicinity of S.E. 12th Street rather than following existing Scott Street (Figure 3.7 in Final EIS). This alignment would diagonally cross six residential blocks of properties and would require the relocation of approximately 15 households (approximately five more than the Preferred Alternative). In addition, the ramps at S.E. 14th Street and E. 15th Street extension at Maury Street (in lieu of the ramps provided at the Scott Avenue location of the Preferred Alternative) would require additional right-of-way acquisition and relocations, additional bridge structures and paving. It is estimated that this alternative would cost in excess of \$1.5 million more than the Preferred Alternative and would include the dead-ending of many streets because of the diagonal crossing of city blocks. It would also have run through the center of this neighborhood, isolating residents, churches and parks on either side. The Preferred Alternative runs along the northern edge of the neighborhood and would separate the residential area from an industrial area to the north. Alternative 8 was similar to Alternative 9, following existing Maury Street (Figure 3.7 in Final EIS). It was deleted for the same reasons as was Alternative 9.

The three Street Widening alternatives would have widened existing streets to accommodate projected traffic rather than providing a new roadway. They would have required the removal of sidewalks, on-street parking, landscaping and, in some cases, buildings. In addition, they would have resulted in increased traffic through many residential areas with increased noise, congestion, pedestrian impacts, park impacts, etc. These alternatives are illustrated in Figures 3.8-3.10 in the Final EIS and discussed on pages 3.28-3.34 of that document.

The No Action alternative was also considered (refer to pages 3.14-3.15 in the Final EIS). This alternative was rejected because it would not meet project needs and would result in increased traffic congestion on many local streets. This alternative, as well as the street widening alternatives, were also previously discussed in section 3 under the section on the Sherman Hill Historic District.



In order to avoid taking any land from Sam Cohen Park, three design modifications of the Preferred Alternative were also considered. The first alternative investigated was designed to avoid both the park and the industrial property. This resulted in a horizontal alignment with a curve radius of approximately 358 feet or less in the vicinity of Sam Cohen Park and concave northeasterly. This sharp curve would have to be located immediately west of the designed 819-foot radius curve, which curve is concave southerly and is located west of S.E. 14th Street. The resulting sharp reversal of the alignment (S-curve) is objectionable from traffic safety and traffic efficiency standpoints (the Preferred Alternative would have horizontal curves with radii of 716 feet or more, based on a design speed of 45 miles per hour). The design speed of the proposed roadway would have to be lowered to 25 miles per hour or less due to these factors. Therefore, this modification is not reasonable from an engineering or safety viewpoint. This alternative would also require the crossing of an additional railroad track, which serves the adjacent industry.

The second design modification to avoid Sam Cohen Park was designed to comply with horizontal curvature criteria for the design speed of 45 miles per hour. In order to avoid the park, this alignment would begin to curve northwesterly immediately west of S.E. 14th Street. As a result, curve radii ranging from 716 feet and 1,273 feet could be provided; but the resulting roadway would intrude into the buildings of an industrial property located at the northwestern corner of Scott Avenue and S.E. 14th Street, necessitating its acquisition and relocation to another site. The value of the land and buildings alone is estimated to be in excess of \$500,000.00. The estimated cost for moving Sam Cohen Park to another location in this neighborhood is \$57,000.00. This includes the acquisition cost, relocation of the water trough, fencing, surveying, landscaping and staff time.

The third design modification was to locate the arterial to the north of the site and north of the previously described industrial property. In order to pass to the north of this building, the arterial would have to cross under the S.E. 14th Street viaduct approximately 340 feet north of Scott Avenue and in doing so would cross the trackage of the Chicago & North Western Transportation Company (CNW) at the point the Burlington Northern Railroad (BN) track joins the CNW trackage. The BN track crosses under the S.E. 14th Street viaduct approximately 420 feet north of Scott Avenue and then curves southeasterly, crossing Scott Avenue approximately 1,210 feet east of S.E. 14th Street. The arterial must either stay south of the BN trackage and require the acquisition of another industrial building in the northeasterly quadrant of the S.E. 14th Street-Scott Avenue intersection or cross the BN trackage easterly of S.E. 14th Street, resulting in yet another at-grade railroad crossing.

Locating the arterial even further to the north would require the crossing of two railroad trackages and an undercrossing of the S.E. 14th Street viaduct. It is estimated that this alternative would cost in excess of \$500,000.00 more than the Preferred Alternative in this vicinity. All railroad crossings involved in this alternative would involve high degrees of skew and thus be very undesirable.

#### Measures to Minimize Harm

Noise abatement measures were considered for this park but were found to be unfeasible. A 12-foot noise barrier would be required along most of the north and east sides of the park (about 550 feet long) to reduce the noise 4 dBA. Besides being ineffective, the barrier would be a significant visual intrusion on the park and was not favored by the Park and Recreation Board.

In lieu of noise barriers and replacement land being purchased adjacent to the park, the Des Moines Park and Recreation Board has asked that the park be relocated and reconstructed at another location in the neighborhood (refer to p. B.24 in Appendix B). Expenses involved in the location and acquisition of a comparable property, moving of the watering trough, Yaw memorial and associated facilities, and landscaping would be eligible project costs. The intended use of the park to serve senior citizens will not be affected by relocation to another site in the neighborhood. Senior citizens are located throughout the neighborhood rather than being concentrated in one place.

The neighborhood and the Southeast Neighborhood Priority Board will be consulted by the Des Moines Park and Recreation Board regarding the new location for the park. The SHPO and the National Park Service will be consulted regarding relocation of the water trough (refer to previous discussion in Section 3).

#### Conclusion

Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the use of land from Sam Cohen Park and that the proposed action includes all possible planning to minimize harm to Sam Cohen Park resulting from such use.

#### Riverside Park

##### Description

Riverside Park is a 16.3-acre park located south of Elm Street between S.W. First and Second Streets. It is owned by the city of Des Moines and controlled by the Des Moines Park and Recreation Board (see Plates 9 and 10, Appendix A). The land in

the northern half of the park was the site of the earliest settlement in the city, being occupied in the early 1840s by Fort Des Moines No. 2 and subsequently by the original town of Fort Des Moines (refer to previous discussion on "Impacts to Archaeological Resources"). This land was set apart and devoted to park purposes by the City Council in 1901. Prior to that time, it was referred to as public ground and was owned by the city of Des Moines.

The southern part of the park was originally the channel of the Raccoon River and was created when the city, in 1913, undertook to change the course of the Raccoon River to a point further south where it still flows today. On completion of the new course, the old river channel was abandoned and gradually filled with ashes and dirt and made available for park development. The river channel was originally owned by the state of Iowa. In 1924, the State Board of Conservation created a state park on the site, and the city of Des Moines accepted the custodianship of the park. Ownership was subsequently turned over to the city. The western part of the park is used for storage of street maintenance materials by the city of Des Moines.

The park has been the site of several efforts to commemorate the old Fort and the early settlement of Des Moines. In 1908, the Daughters of the American Revolution (DAR) erected a granite monument to Fort Des Moines just south of Elm Street and about 100 feet west of the Des Moines River bank. This monument is no longer present. In 1965, a log cabin was moved from its original site in Richmond, Iowa, and rebuilt on the site in memory of the birthplace of Des Moines. The Birthplace of Des Moines Association, affiliated with the Polk County Historical Society and partially funded by the DAR, was responsible for this memorial. The cabin dates from the mid-1800s and was thought to be quite similar to the storehouse that was built at Fort Des Moines No. 2 in 1843. It was erected at what was believed to be the site of the original storehouse. At that time, it was viewed as the first step in the restoration of the old Fort Des Moines area. However, no subsequent efforts to restore the Fort have been made. The cabin still stands in the northeast corner of Riverside Park and is maintained by the Des Moines Park and Recreation Board.

The only recreation facility in Riverside Park is the Sec Taylor Stadium, located in the southeastern portion of the park. The remainder of the park consists of an open, grassy area to the north and parking lots for the stadium to the north and west of the stadium. Sec Taylor Stadium was constructed in 1946 by a private organization and turned over to the city for operation. It was originally named Pioneer Memorial Stadium. It has served as the home for a major league farm team during most of its existence and is currently the home of the Iowa Cubs, the Triple



A Minor League Farm Club of the Chicago Cubs. The stadium is used by many other groups, including government, civic organizations and charities. Examples of functions recently held there include charity softball games, rock concerts, dog shows and church services.

### Project Impacts

The Preferred Alternative would require the acquisition of approximately 0.8 acre of land from the northern area of the park (Plate 9, Appendix A). The project alignment would be located approximately 70 feet from the log cabin. It is not anticipated that this will have a negative effect on this cabin or its uses for occasional civic functions. No other park facilities currently exist in this area.

The project will also result in increased noise levels within the park. Existing noise levels in the northeast corner of the park were measured at 66 dBA (Leq). The predicted peak noise level (year 2000) is 69 dBA (Leq) with the project in place in this area.

Access to the park will not be impaired by the project. Existing accesses are on S.W. First and Second Streets and Elm Street. The project will maintain the S.W. First Street access and provide an access from the west along S.W. Second Street. Thus, the project will greatly improve accessibility to stadium events from the eastern, western and southern areas of the city. Access to overflow parking areas will be affected by the project. The northwest corner of Riverside Park is currently used for overflow parking for stadium events. The Park and Recreation Board has a long-term agreement with the Iowa Cubs to make this area of the park available for parking. Access to this lot would be cut off by the project. Another overflow parking area that is frequently used occurs to the west of S.W. Third Street. Vehicular and pedestrian access to this area would be adversely affected by the project.

### Avoidance Alternatives

All alternative alignments that were examined that would meet the traffic needs would have required passing through some portion of Riverside Park. Any alternatives that would avoid the park would have to be located to the north within the downtown area or to the south of the Raccoon River.

Two new construction alternatives were considered that would avoid Riverside Park. Alternative E (Mulberry and Cherry Street Extensions to 15th Street) was not selected because of its severe impact on commercial properties and its inconsistency with future land-use planning and revitalization plans for the CBD area. It



would not relieve traffic congestion in the CBD and would not serve the industrial area to the south, two of the major purposes of the project. This alternative would also have displaced a National Register eligible property at 1440 Locust (Apperson Iowa Motor Company). Alternative F (16th Street/Cherry Street and 15th Street/Mulberry Street Connections) was not selected for the same reasons listed for Alternative E. However, it would not displace any National Register eligible properties. Both of these alternatives and the reasons for their deletion are described in more detail in Section 3 of the Final EIS and illustrated in Figure 3.11 (Final EIS).

The best alignment variation that would meet the project need and avoid Riverside Park would shift the roadway to the north intruding onto the Younkers Warehouse site located just north of Elm Street. The Warehouse is eligible for the National Register, and this alternative would result in taking land from this historic site. A reduced roadway cross-section to avoid both the Warehouse and the park would not provide sufficient capacity for the projected traffic demand; would compromise the safety of the facility by having a short section of a narrow roadway in the four-lane facility; and would not meet the project objectives. For these reasons, alternatives to shift the alignment to the north or to reduce the roadway section are not feasible and prudent.

Alternative locations for the Indianola Avenue connection were investigated at S.W. Sixth and S.W. Seventh Street locations. These routes are 0.3 mile west of and parallel to the proposed northerly extensions of the Indianola Avenue connection that are located at S.W. Second and S.W. Third Streets. Existing S.W. Seventh Street is a two-way street which crosses the Raccoon River and then crosses numerous railroad tracks and streets between Tuttle Street and Mulberry Street by way of a viaduct. This alternative would require the widening of the existing S.W. Seventh Street bridge over the Raccoon River, the construction of a new two-lane viaduct between Tuttle and Mulberry Streets (overpassing numerous railroad tracks, Cherry Street, Elm Street and other streets), the construction of a new pavement connection between S.W. Seventh Street and S.W. Sixth Street north of the Raccoon River, the reconstruction of S.W. Sixth Street from north of the Raccoon River to Tuttle Street and the widening of Indianola Avenue at the intersection with S.W. Seventh Street. This alternate would result in the construction of the northerly approach to the viaduct on S.W. Sixth Street in front of the Polk County Courthouse, with resulting adverse aesthetic impacts on this historic/architectural structure. Other impacts of this alternative include the increase in traffic congestion in the core CBD area in the vicinities of S.W. Sixth and Seventh Streets due to increased traffic, the crossing of the open space areas along the Raccoon River at S.W. Seventh Street and negative impacts on businesses along the west side of S.W. Sixth Street between Cherry and Mulberry Streets. The intention of this segment of the project is to connect with S.W. Second and Third Streets which are on the edge of the CBD rather than to S.W. Fourth to S.W. Eighth which are

Fourth to S.W. Eighth which are in the core of the CBD. It is estimated that this alternative would cost in excess of \$10 million.

The three Street Widening alternatives that were considered for the project would also have avoided taking land from the park but would have had severe impacts on other parks and residential areas. These are discussed in Section 3 of the Final EIS and illustrated in Figures 3.8, 3.9 and 3.10 of that document. The No Action alternative would not have met the need for the project and would have resulted in increased traffic and noise adjacent to several other city parks.

An alignment to the south of the Raccoon River was considered early in project development but was dropped because it would have been too far removed from the project area to be effective in reducing traffic in the CBD and would not serve the downtown industrial area. Furthermore, such an alternative would include an additional crossing of the Raccoon River with a long, highly skewed bridge, and northeasterly of the subsequent crossing of the Des Moines River would involve additional right-of-way due to its diagonal alignment while proceeding to a northerly junction with the Preferred Alternative in the vicinity of Scott Avenue and S.E. 12th Street.

#### Measures to Minimize Harm

In lieu of replacement land, the Des Moines Park Board has requested monetary reimbursement for the acquisition of this land. They have also requested landscaping in the vicinity of the log cabin (refer to p. B.21, Appendix B).

During final design of the project, design features, such as retaining walls, will be evaluated in an attempt to avoid or minimize the amount of land required from this park.

Noise walls at this site would block the motorists' and park users' view of the Des Moines River and would detract from the scenic quality of the area. They would also isolate the area from the downtown district. Therefore, no noise abatement measures are being considered for this area. A landscaped buffer along the roadway will be developed in the project right-of-way to be compatible with the park environment.

During the design of the project, designs to provide vehicular and pedestrian access to the overflow parking lots in Riverside Park will be developed. Pedestrian safety features, such as fencing, will also be considered at that time. Design concepts will be reviewed with representatives of the Des Moines Park and Recreation Board prior to their incorporation into the project.

## Conclusion

Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the use of land from Riverside Park and that the proposed action includes all possible planning to minimize harm to this park resulting from such use.

### River Front Open Space Development Areas

#### Description

The River Front Open Space Development Areas are owned by the city and maintained as open spaces by the Park Department. The area encompasses the entire length of the Des Moines River and part of the Raccoon River within the city limits for approximately 11.8 miles and includes about 1,400 acres. The city of Des Moines has owned much of the river front land in the city along the Des Moines and Raccoon rivers since the early 1900s. In 1975, the city proposed to acquire the additional land needed to complete the river front corridor and to develop the corridor as an open space and recreation area.

In 1975, the city requested federal funding for this project from the Land and Water Conservation Fund. A Final Environmental Impact Statement for the project was distributed by the Bureau of Outdoor Recreation, Department of Interior in 1977 (Final Environmental Statement, Des Moines River Front Development, Land and Water Conservation Fund Project No. 190581, Des Moines, Iowa). In this statement, the boundaries of the project reflected the land needed for the CBD Loop transportation route (referred to at that time as "South Loop Expressway"). It was stated that "access for the bike path and hiking trail will be provided across the expressways either below the bridge or with overpasses" (p. 4). To date, land acquisition for the project has been completed; and the asphalt bike path has been constructed on the east side of the Des Moines River. Federal funds (U.S. Department of Interior Federal Grant No.: (HCRS) N.P.S. #19-00581.4 (Iowa)) were used for bike path construction. However, no federal funding was used to acquire the properties in the CBD Loop Arterial project corridor.

#### Project Impacts

The Preferred Alternative will require the acquisition of 2,000 square feet from this open space area along the west bank of the Des Moines River (West River Front Park) in the vicinity of Elm Street (Plate 9, Appendix A), 0.75 acre on the east bank of the Des Moines River (East River Front Park) in the vicinity of Raccoon Street (Plate 8, Appendix A), 0.3 acre on the south



bank of the Raccoon River in the vicinity of Jackson Avenue (Plate 10, Appendix A), and 0.13 acre on the north bank of the Raccoon River in this area (Plate 10, Appendix A).

The project would cross the asphalt bike path along the east side of the Des Moines River (Plate 9, Appendix A). A Section 6(f) determination request will be submitted to the Iowa State Liaison Officer, Iowa Department of Natural Resources, for the crossing of the existing bike path as it was constructed with U.S. Department of Interior funds (refer to letter from Iowa DNR in Appendix C). Discussions with Iowa DNR have indicated that no problems are anticipated with the rerouting of this bike path. The land was not purchased with federal funds. It will also cross three other river front areas where future pedestrian trails and bike paths are proposed (see Map 7 in the 1977 Final EIS for the River Front Development project). Those paths would parallel the Des Moines or Raccoon Rivers (see Plates 9 and 10, Appendix A).

#### Avoidance Alternatives

All alternatives that were evaluated for this project crossed these open spaces at various points. Because these open spaces border the entire length of the Des Moines River within the city limits, it would be necessary for the east-west segment of the arterial to be located outside the city to avoid crossing these open spaces at some point. These open spaces border the Raccoon River from S.W. First Street to near 18th Street, which would require the Indianola Avenue connection to be located west of 18th Street, where it would no longer be functional.

Lengthening bridge approaches and spans were also considered as a measure to avoid any taking of these lands. This was found to raise the construction cost of the project by \$650,000.00 for the two bridges that would be involved. In addition, considerably more right-of-way would be required. These bridges would also have been much more visually intrusive to the surrounding area than the less elevated ones that are planned.

The No Action and Street Widening alternatives were also considered and deleted because of inability to meet the project need and/or severe residential impacts. These were discussed in more detail in the section on Sherman Hill Historic District.

#### Measures to Minimize Harm

In lieu of replacement land, the Des Moines Park Board has requested monetary reimbursement for the replacement of this land. They also requested landscaping, fencing and relocation of the bike path to the "dry" side of the Des Moines River levee (refer to page B.23 in Appendix B).



As part of the project, the existing bike path will be rerouted from its existing location on top of the Des Moines River flood control levee to a new underpass structure on the "dry" side of the levee under the CBD Loop Arterial (shown in Figure 4 and on Plate 9, Appendix A). Where proposed future trails and bike paths are crossed, the project bridges will be designed to allow sufficient clearance and widths for these to underpass also. Figure 5 depicts a typical cross section under these bridges.

#### Conclusion

Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the use of land from the River Front Open Space Development areas and that the proposed action includes all possible planning to minimize harm to these areas resulting from such use.

#### Des Moines Water Works

##### Description

This property is owned by the board of the Des Moines Water Works. Its primary function is as water collection, water storage and water treatment facilities for the city's water supply. It consists of over 1,500 acres along the Raccoon River, much of which is in its natural state of woods, meadows and wetlands. Most of the Water Works' property south of the treatment facilities (Plate 4, Appendix C and Figure 5.8) is used for park and recreation activities. The area to the north of the treatment facilities where the proposed project is located has no discrete recreation area. No formal or organized recreation occurs there, although some passive use, such as bird watching, fishing from the banks of the Raccoon River and jogging, is occasional.

An important recreation feature south of the treatment facility is a large crabapple arboretum which attracts thousands of people during the spring blooming season. Other facilities located here include pedestrian and bike trails, picnic areas and a fountain and formal garden area. Fishing also occurs from the banks of the Raccoon River.

The area north of the treatment facility (Figure 5.8) contains water intake lines, the North Gallery System, and maintenance access roads for the property's facilities. The long-range plans also call for the area north of the treatment facility and west of the proposed project to be the major expansion area for the water treatment and other related facilities. It is also possible that a bike or hiking trail may be developed along the Raccoon River. If it is developed, such a trail could easily pass under the highway bridges planned for this area.

##### Project Impacts

The Preferred Alternative would require approximately 12.5 acres in this area; Alternative A would require seven acres; and Alternative B would impact 17 acres. The project will introduce noise levels into this area that are predicted to be higher than the existing levels or those for the No Action alternative. A landscaped buffer area will be provided adjacent to the project in this area. Noise abatement measures are not feasible and practical (see noise analysis section).

Although the Des Moines Water Works is commonly referred to as a park, it serves as a multiple-use area for the city's municipal water facilities with the public using portions of it for recreation purposes. Based on its use as described above, FHWA has determined that Section 4(f) does not apply to the portion of the property used by the proposed project. However, even if Section 4(f) would apply, there are no feasible and prudent alternatives to using land from the property and all possible planning to minimize harm has been incorporated into the proposed project. The alternatives and measures to minimize harm analysis are provided below.

## Avoidance Alternatives

No major alternatives were examined that would avoid Water Works Park. There were no feasible routes that could avoid this large area and still meet the project needs. Alternative designs for the project were considered in this area. The two major alternatives that were described in the Draft EIS for the project would have required land from the Water Works. The selected alternative in this area was developed after the Draft EIS was reviewed and was in response to input from the staff of the Des Moines Water Works. The other two alternatives would have required from 7 to 17 acres of land in this area.

Alternative 6, which would avoid the site of the Des Moines Water Works, was preliminarily evaluated but dropped from consideration early in the planning process. Some of the impacts of this alternative are discussed in the Final EIS (pp. 3.20-3.21). In addition, this alternative would overpass Fleur Drive and thereby no direct traffic service would be provided between the north-south and east-west segments of the arterial and Fleur Drive itself.

A modification of Alternative 6 to provide an at-grade intersection with Fleur Drive could be provided, although it would require the shifting of the alignment of Alternative 6 further to the northeast. The provision of such an at-grade intersection would necessitate the general reconstruction of streets in this area, including portions of Locust Street, Grand Avenue and 18th Street. This alternative would also require the acquisition and relocation of Meredith Publishing Company property that is currently located in an area bounded by 18th Street, Fleur Drive, Locust Street, S.W. 16th Street and the railroad tracks north of Market Street. It is estimated that the value of this property is close to \$1 million. Other acquisitions would include the Des Moines Technical High School and several commercial properties, some of which are of historic or architectural significance. It is expected that extreme traffic congestion would continue in this area even with a revised at-grade intersection.

### Measures to Minimize Harm

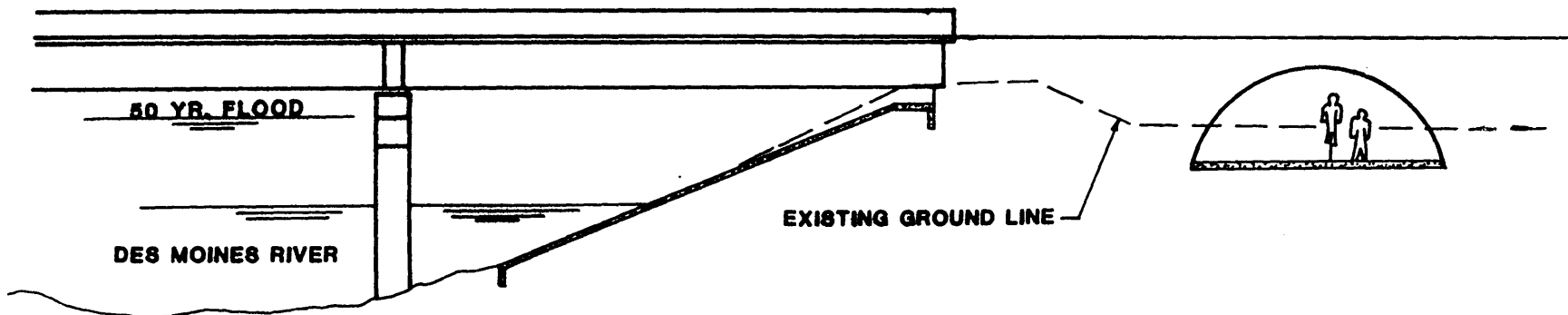
A landscaped buffer area will be provided in the project right-of-way to minimize the visual intrusion upon this area. Noise abatement measures would not be effective in this area because of the elevation of the roadway on bridges and fill. The three-foot high barrier rails planned for the bridges will reduce noise levels slightly. Bridges will be designed to allow for future trails or bike paths to pass beneath them.

## Conclusion

FHWA has determined that the portion of the Water Works property used for the proposed project is not protected under Section 4(f). However, even if Section 4(f) would apply to the use of the portion of the property, there are no feasible and prudent alternatives to using the land, and all possible planning to minimize harm has been done.

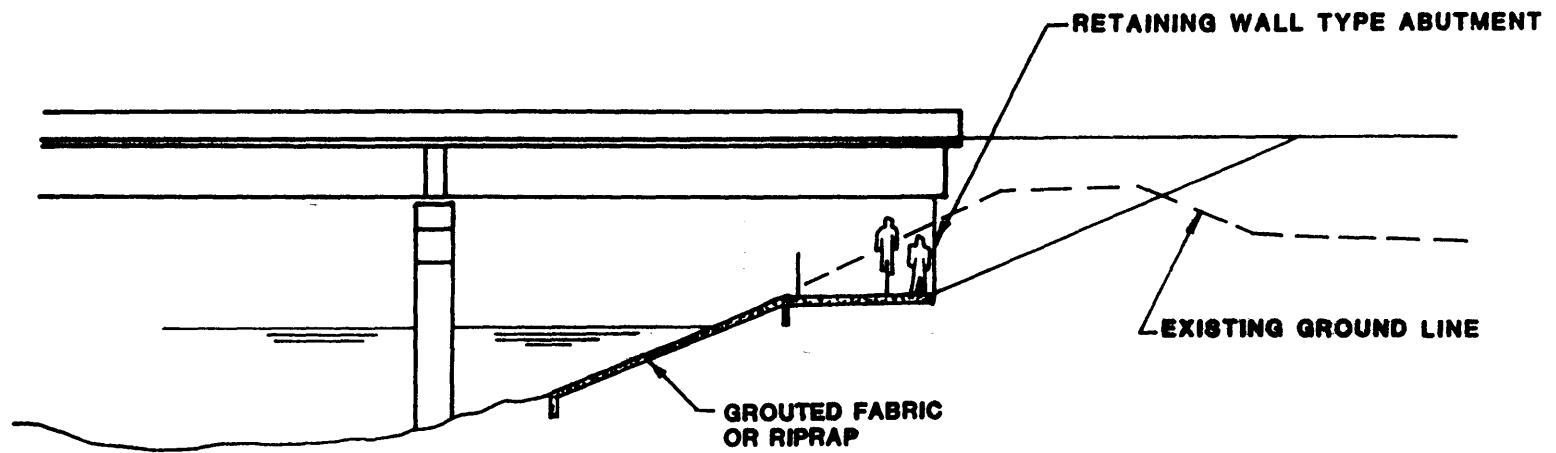
### Additional Impacts of Other Alternatives

Two other parks would be impacted by other major alternatives considered for the project. Alternatives 1A and 1B would require approximately 50 square feet from Chamberlain Park. This is a two-acre neighborhood park located adjacent to the Sherman Hill Historic District. Alternatives 1A, 1B, 2A and 2B would have required 0.10 acre from Hawthorn Park, a 15.5-acre neighborhood park located in the southeast corner of the project area.



**FIGURE 4. CROSS-SECTION OF BIKEWAY TO BE REROUTED UNDER THE CBD  
LOOP ARTERIAL ON THE EAST SIDE OF THE DES MOINES RIVER**





**FIGURE 5. CROSS-SECTION OF BIKEWAY UNDER RIVER  
BRIDGE WITH RETAINING WALL ABUTMENTS**

## SECTION 6

### COMMENTS AND COORDINATION

#### Cultural Resources

Throughout the planning stages of the project, the State Historic Preservation Officer (SHPO) was consulted regarding the evaluation of impacts to cultural resources in the project area. The scope of services for the Phase I and Phase II archaeological surveys and for the historic architectural survey was reviewed with the SHPO prior to the initiation of field work. From 1981 until the present, many field reviews of the project have been conducted with various staff from the SHPO office. The comments of the SHPO regarding the project's impacts on cultural resources appear in the letters in Appendix B. The Memorandum of Agreement regarding cultural resources also appears in Appendix B.

#### Parks and Open Spaces

The comments on park impacts by the U.S. Department of Interior on the Draft EIS appear in Appendix C. Coordination meetings were held with the staff of the Des Moines Park and Recreation Department in the fall of 1985 and in early 1986. The impacts of the project on parks were reviewed, and input regarding mitigative measures was requested from the staff and Park and Recreation Board. The response of the Park Board appears in the letter in Appendix B.

#### Agency Response to Draft 4(f) Statement

The Draft 4(f) Statement was circulated to the appropriate federal, state and local agencies on December 22, 1986. Comments were received from seven agencies and are included along with responses, where appropriate, in Appendix C.

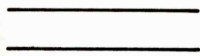
Rep/Dm3/AA3

**APPENDIX A**

**AERIAL PHOTOGRAPHS  
OF PROJECT**

# AERIAL PHOTOGRAPHS OF PROJECT AREA

## LEGEND



ROADWAY



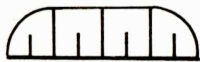
PARK BOUNDARIES

1.21

SITE NUMBERS FOR HISTORIC/ARCHITECTURAL  
RESOURCES THAT WOULD BE DISPLACED BY THE PROJECT



DIRECTION OF TRAFFIC FLOW



ROADWAY ABOVE GROUND LEVEL



ROADWAY BELOW GROUND LEVEL

SCALE: 1" = APPROX. 100'

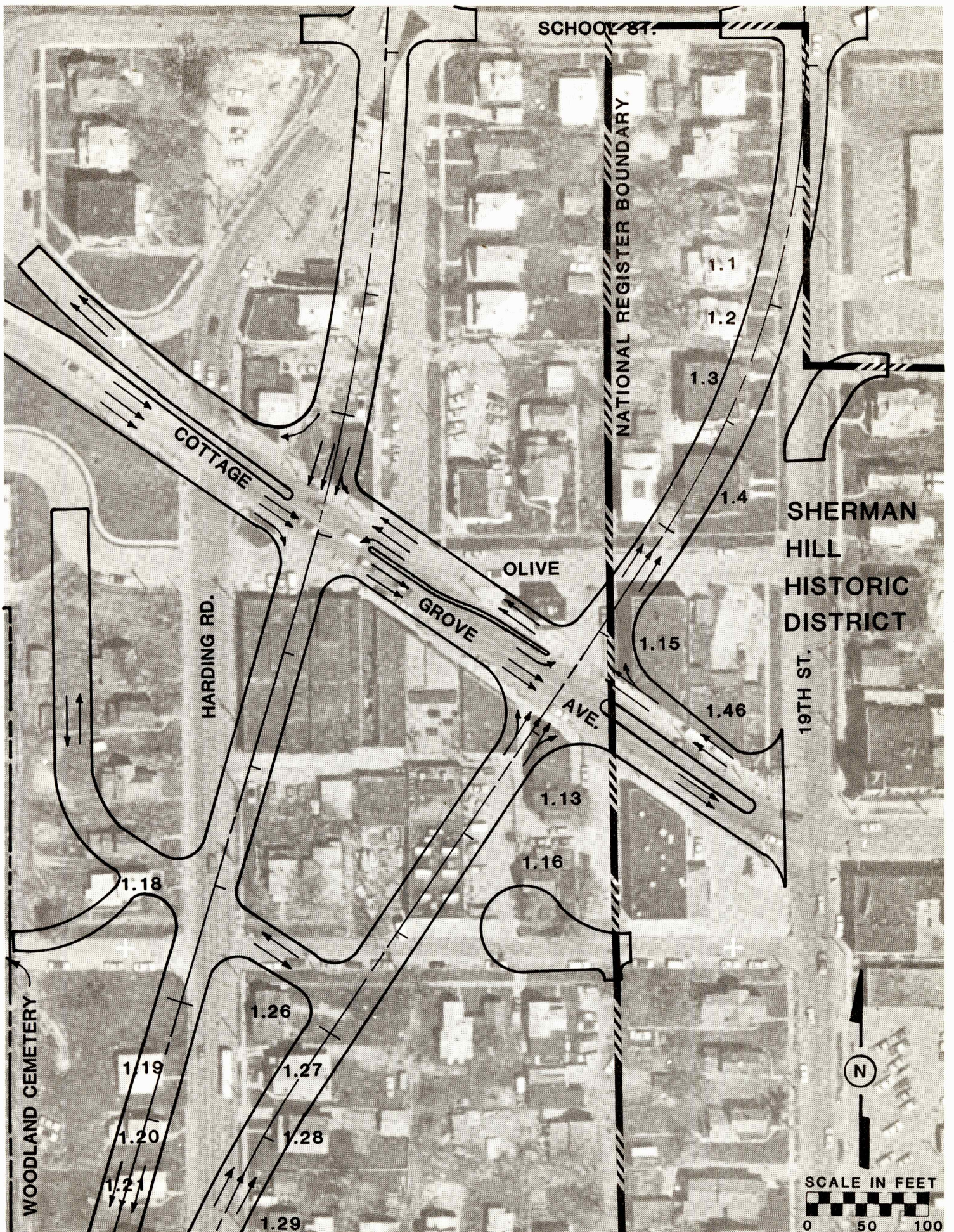
DATE OF AERIAL PHOTOGRAPHY - APRIL 1975





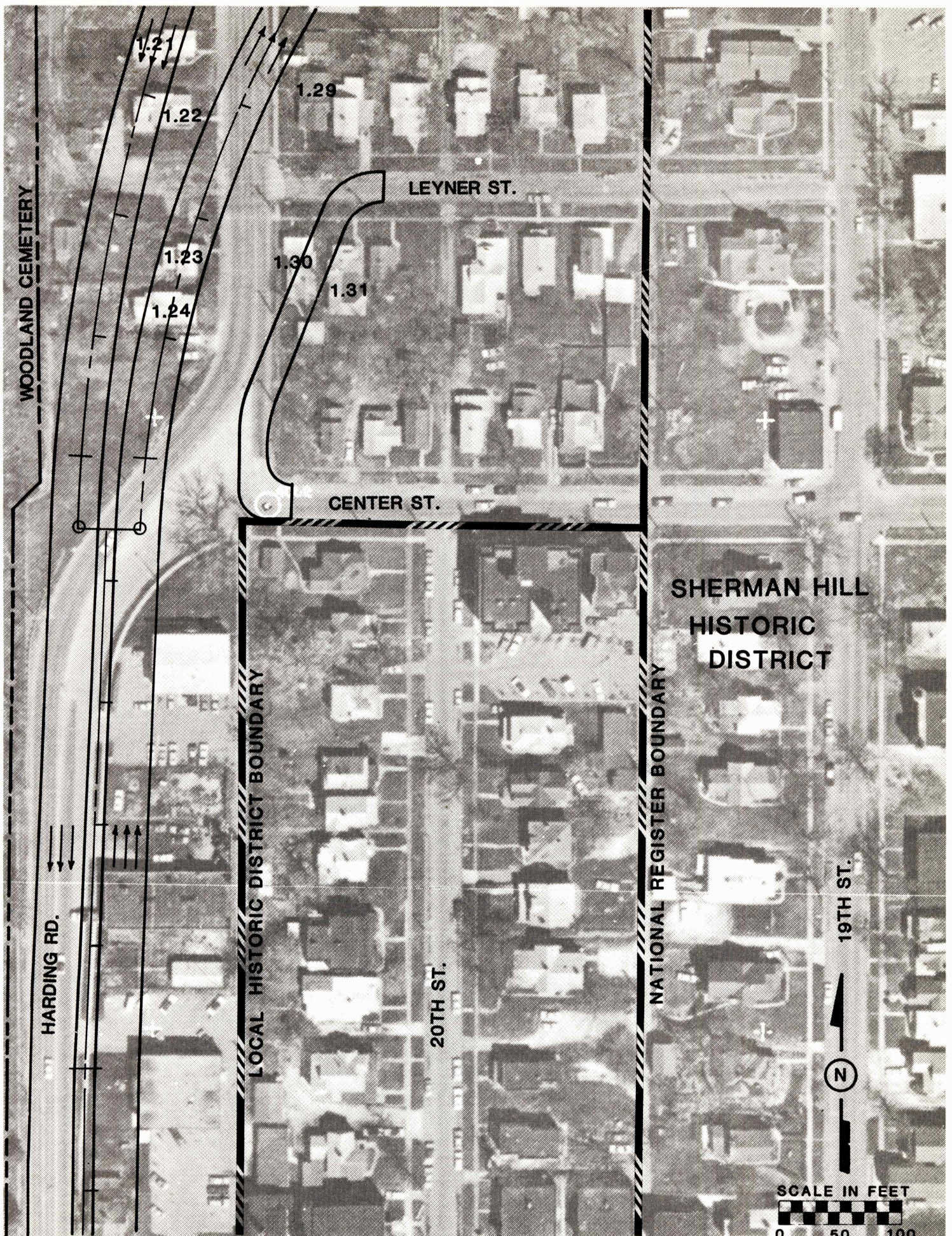
PLATE 1 INDEX MAP TO PLATES 2-11





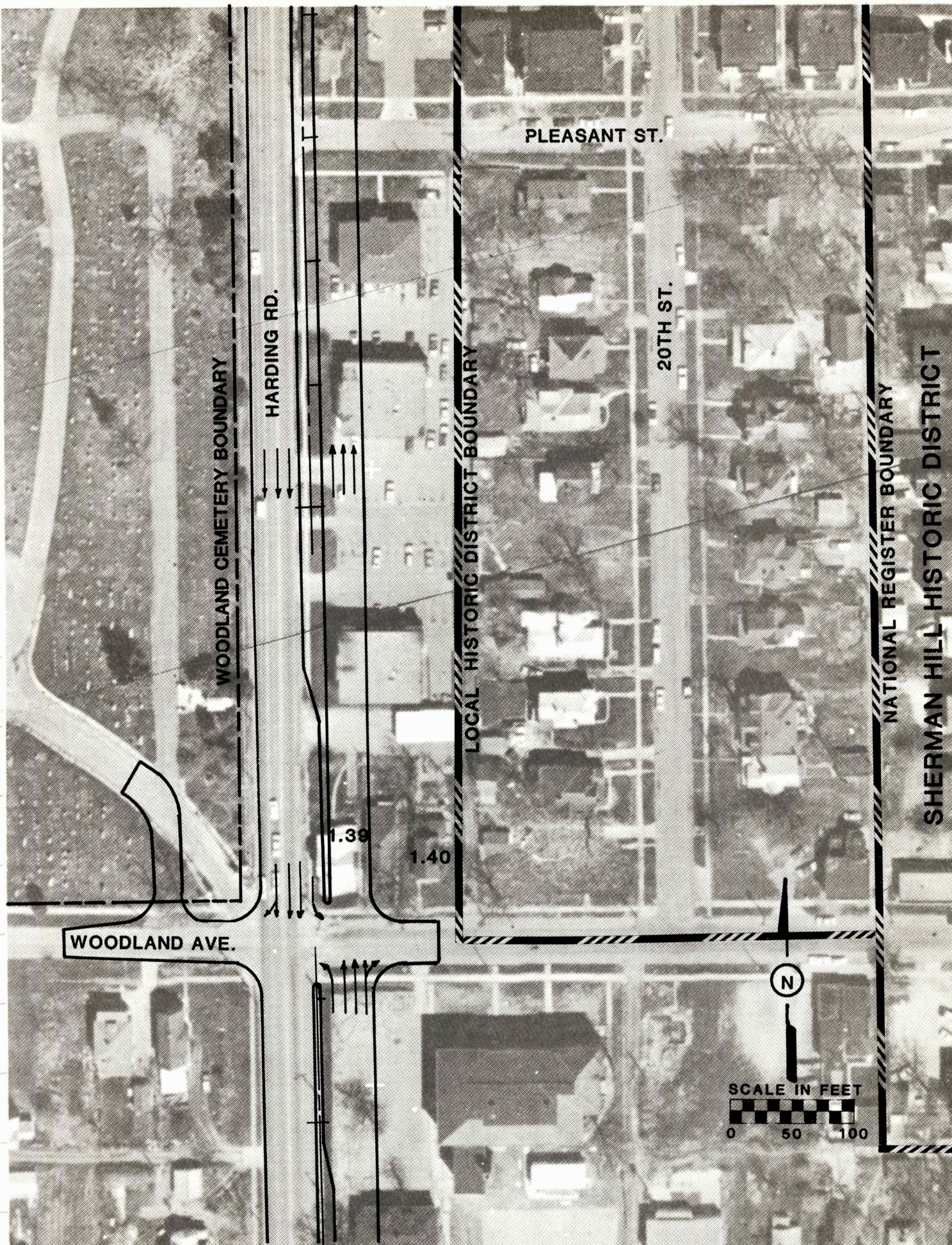
**PLATE 2 CONTRIBUTING STRUCTURES IN THE PROJECT RIGHT-OF-WAY**





**PLATE 3 CONTRIBUTING STRUCTURES IN THE PROJECT RIGHT-OF-WAY**





**PLATE 4 CONTRIBUTING STRUCTURES IN THE PROJECT RIGHT-OF-WAY**



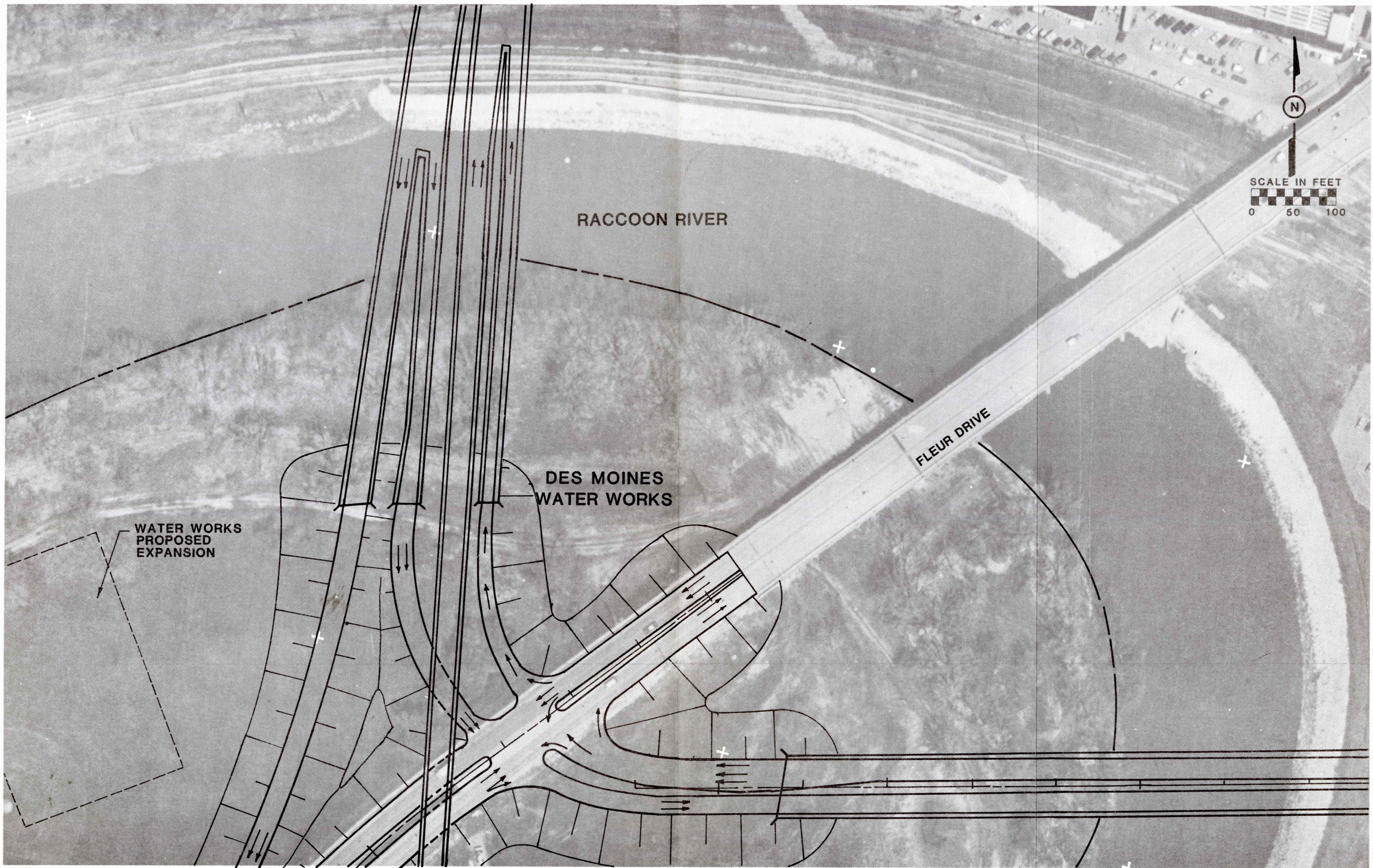


PLATE 5 PROJECT ALIGNMENT IN THE DES MOINES WATER WORKS



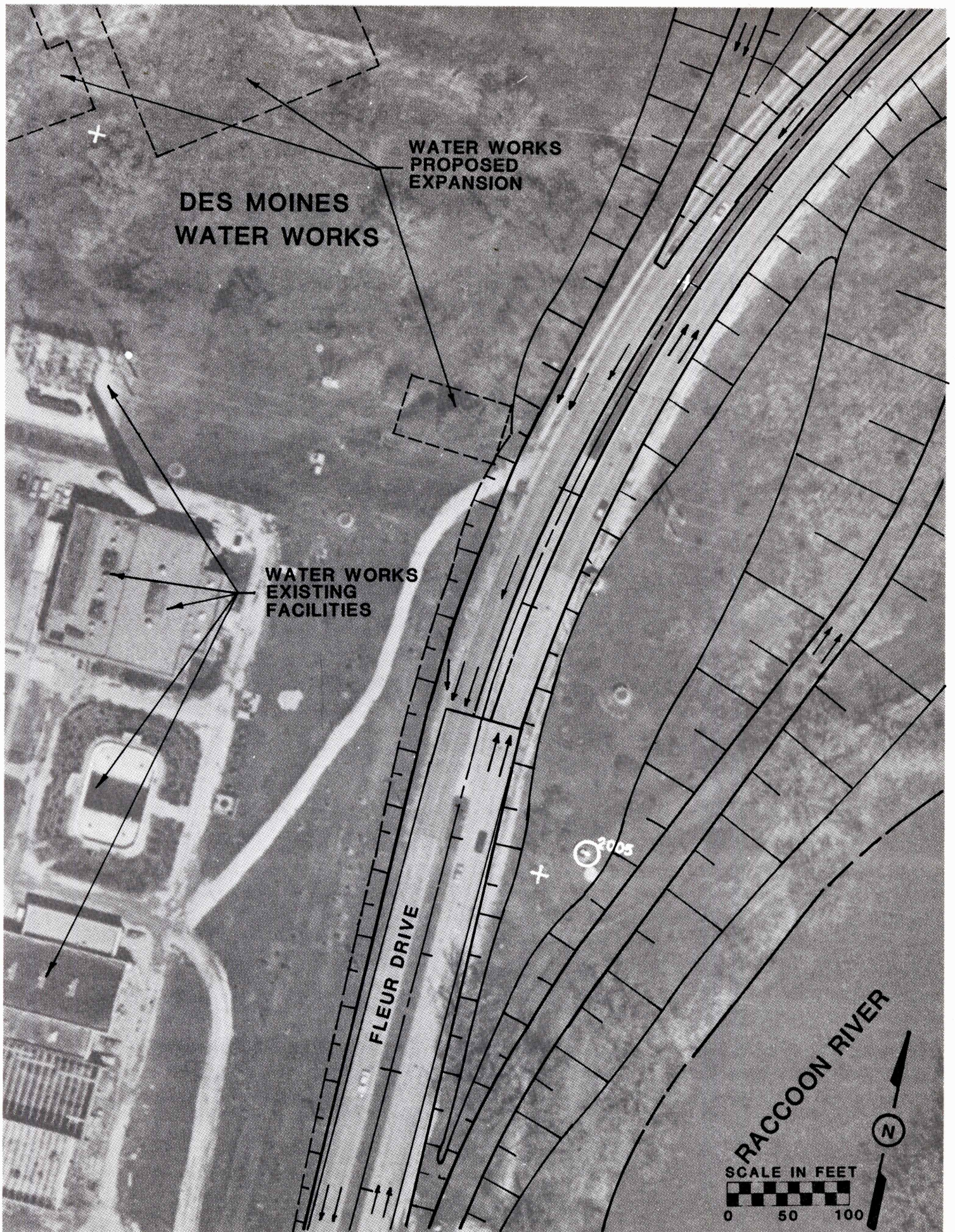


PLATE 6 PROJECT ALIGNMENT IN THE DES MOINES WATER WORKS



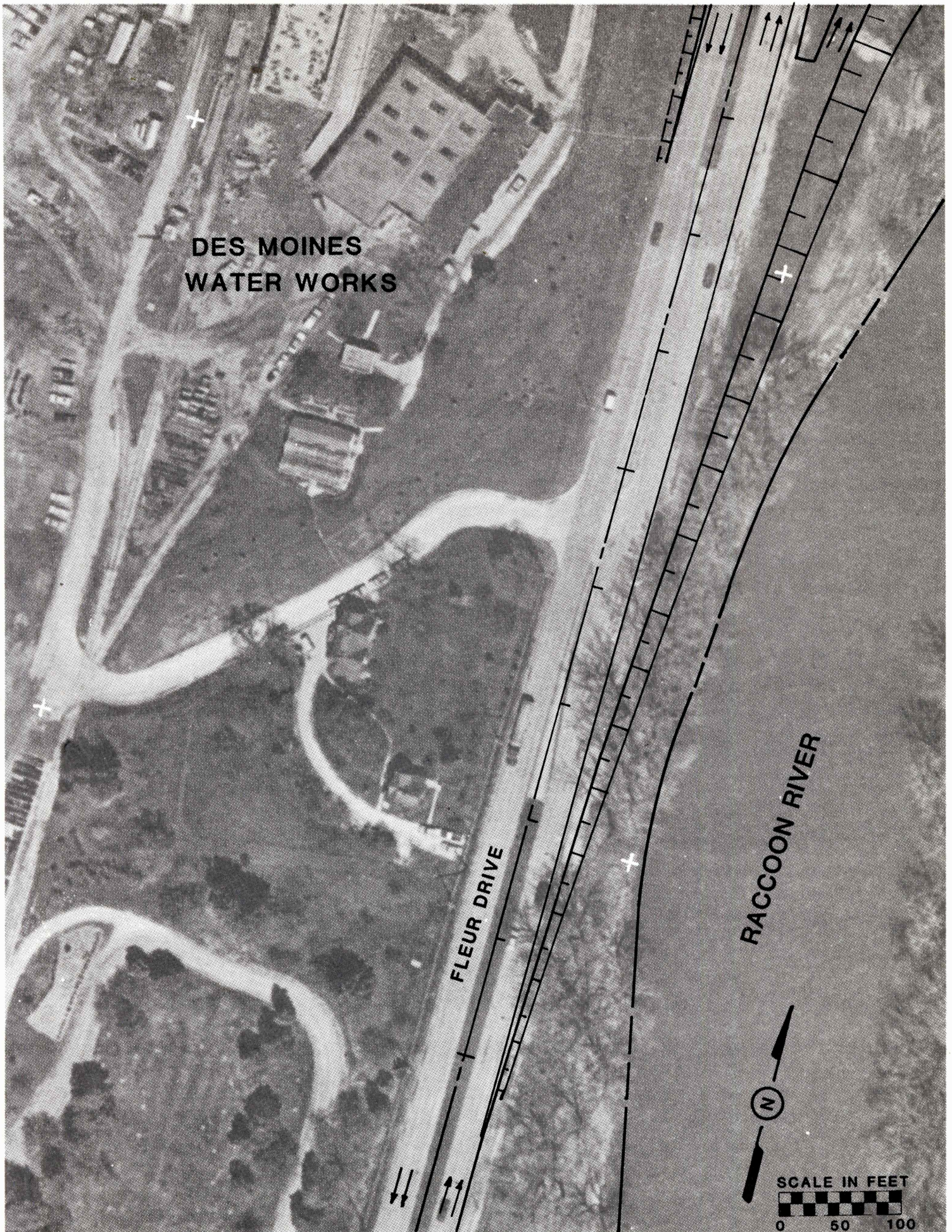


PLATE 7 PROJECT ALIGNMENT IN THE DES MOINES WATER WORKS



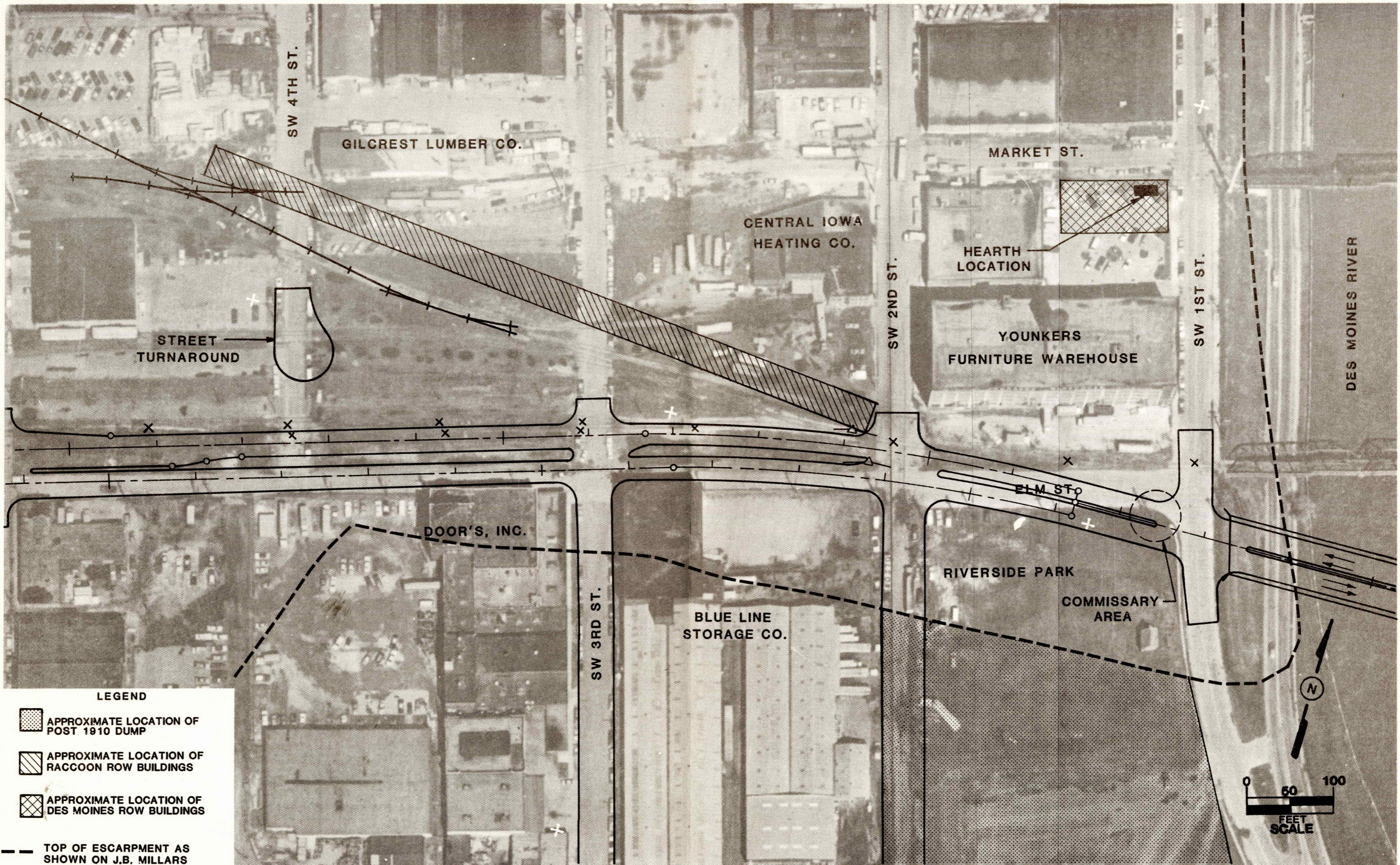


PLATE 8 PROJECT ALIGNMENT IN THE FORT DES MOINES NO. 2 AND CITY DUMP AREA



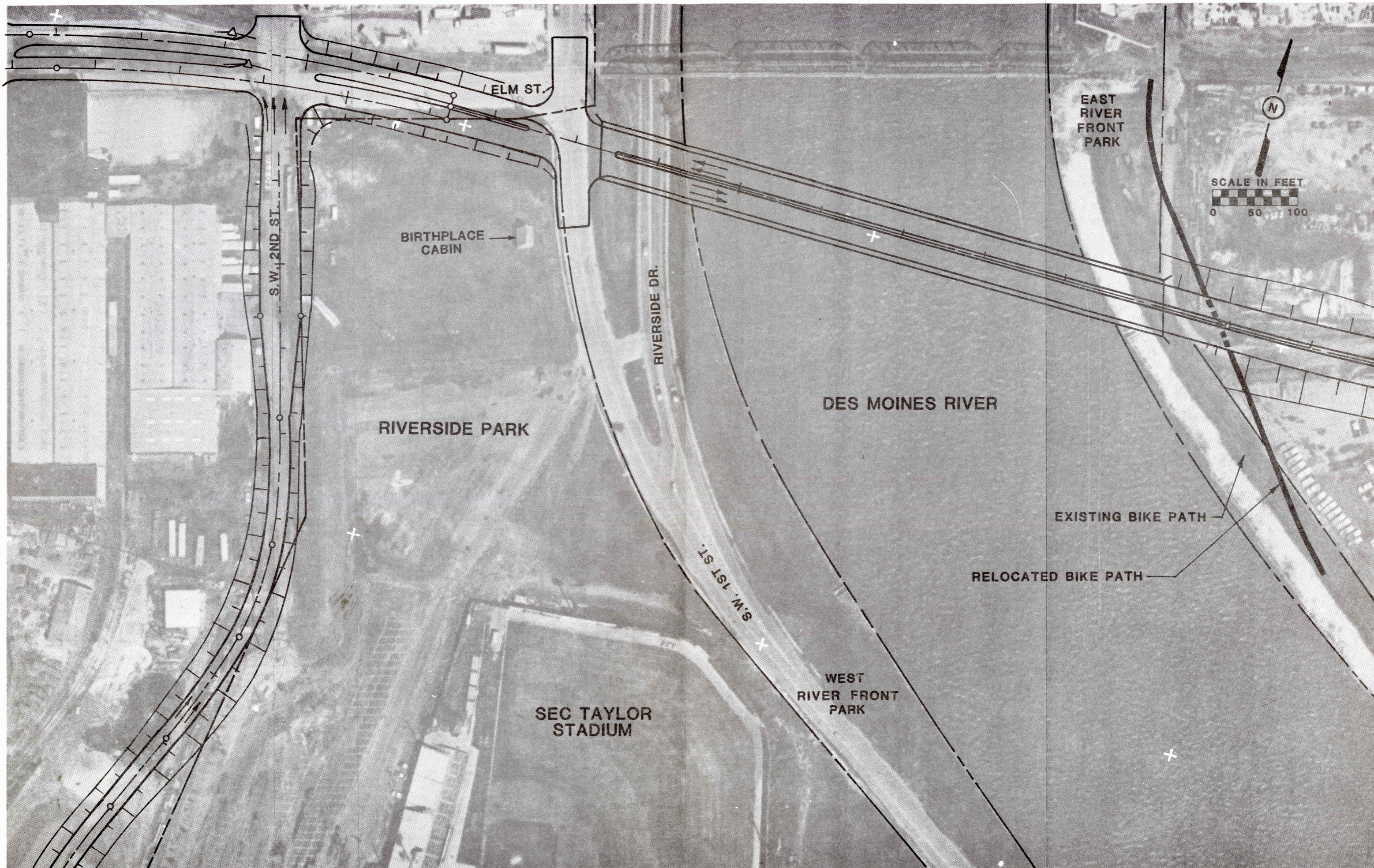
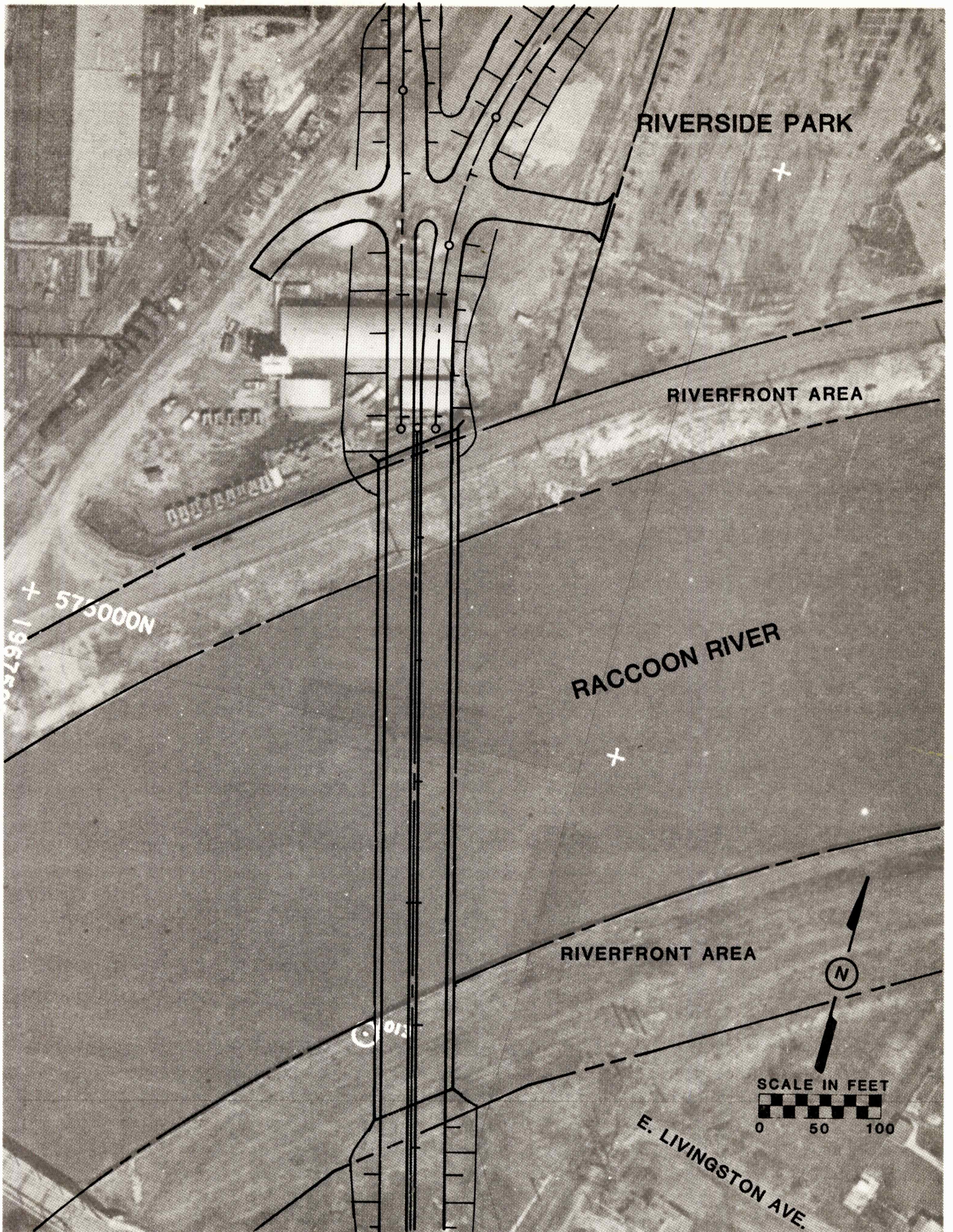


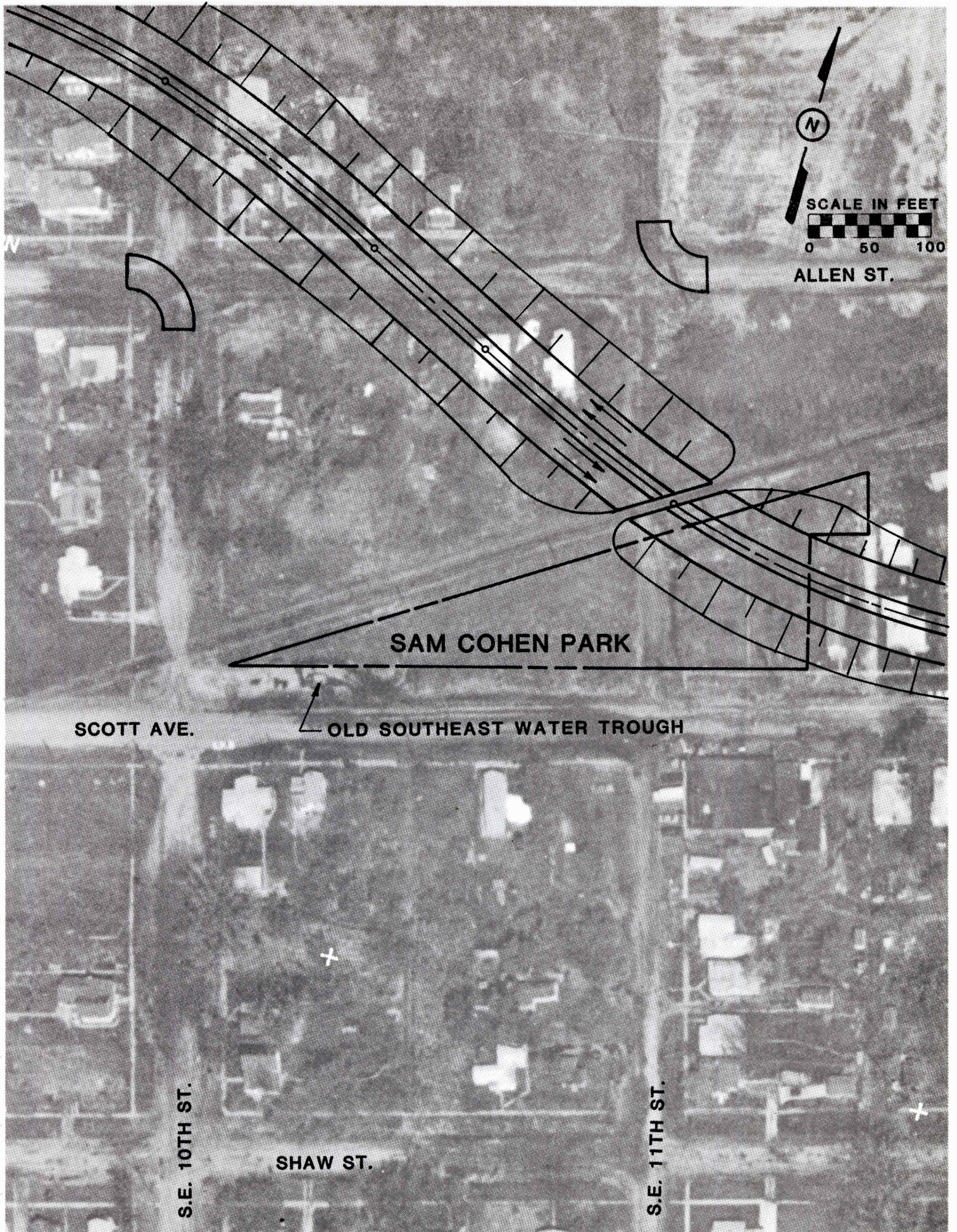
PLATE 9 PROJECT ALIGNMENT IN RIVERSIDE PARK, WEST RIVER FRONT PARK AND EAST RIVER FRONT PARK





**PLATE 10 PROJECT ALIGNMENT IN RIVERSIDE PARK AND RIVERFRONT AREA**





**PLATE 11 PROJECT ALIGNMENT IN SAM COHEN PARK**



**APPENDIX B**

**MEMORANDUM OF AGREEMENT  
AND COORDINATION LETTERS**



APPENDIX B

INDEX

	<u>Page</u>
Memorandum of Agreement for Cultural Resources.....	B.1
Determination of Eligibility for Site 13PK61.....	B.5
Letter from Iowa SHPO - September 17, 1982.....	B.6
Letter from Iowa SHPO - October 21, 1985.....	B.7
Letter from Iowa SHPO - January 22, 1986.....	B.9
Letter from U.S. Department of Interior - July 6, 1983.....	B.11
Letter from Des Moines Park and Recreation Director - November 14, 1985.....	B.16
Resolution No. 9196, Des Moines Park and Recreation Board..	B.18

# Advisory Council On Historic Preservation

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The Old Post Office Building  
1100 Pennsylvania Avenue, NW, #809  
Washington, DC 20004

---

## MEMORANDUM OF AGREEMENT

WHEREAS, the Federal Highway Administration (FHWA) has determined that the Des Moines CBD Loop Arterial Project will have an effect upon properties included in and eligible for inclusion in the National Register of Historic Places, and has consulted with the Iowa State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to the regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f),

NOW, THEREFORE, FHWA, the Iowa SHPO, and the Council agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

### Stipulations

FHWA will ensure that the following measures are carried out.

#### I. MARKETING

A. Prior to any relocation or clearance activities, the following properties will be made available to the public for purchase and relocation within the Sherman Hill Historic District or other sites approved by the Iowa SHPO.

1. Clifton Heights United Presbyterian Church,  
1218 Indanola Road
2. Capital City Woolen Mills, 113 S.W. 8th Street
3. Contributing Buildings - Sherman Hill Historic District
  - a. 924-926 19th Street
  - b. 934-936 19th Street
  - c. 940 19th Street

- d. 944 19th Street
- e. 1905-1907 Cottage Grove Avenue
- f. 1909 Cottage Grove Avenue
- g. 1920 Cottage Grove Avenue
- h. 1919 Crocker Street
- i. 1936 Crocker Street
- j. 810 Harding Road
- k. 814 Harding Road
- l. 828 Harding Road
- m. 832 Harding Road
- n. 835 Harding Road
- o. 836 Harding Road
- p. 855 Harding Road
- q. 856 Harding Road
- r. 860 Harding Road
- s. 2004 Leyner Street
- t. 2005 Leyner Street
- u. 2008 Leyner Street
- v. 2015 Woodland
- w. 2019 Woodland

The cost of obtaining the properties will be \$1. A marketing plan which provides for the advertisement of the properties for a period of 45-days will be developed in consultation with the Iowa SHPO.

B. FHWA will forward proposals for the relocation of properties to the Iowa SHPO for review and comment within a 30-day period. The comments of the Iowa SHPO will be taken into account prior to the approval of proposals.

C. FHWA will ensure that properties are moved in accordance with the recommended approaches in the Department of Interior's publication, "Moving Historic Buildings," in consultation with the Iowa SHPO, by a professional mover who has the capability to move historic properties properly. FHWA will offer to reimburse the new owners an amount equal to the estimated cost of demolition of the property to assist in defraying the cost of the move.

D. Within 90 days of the move, the Iowa SHPO will reevaluate the property on its new site and make a recommendation to the Secretary of the Interior as to its continued inclusion in the National Register.

E. Prior to the relocation of any property, it will be documented as specified in Stipulation II below.

F. FHWA may demolish those properties for which marketing proves unsuccessful following the completion of Stipulation II below.

## II. DOCUMENTATION

Prior to the demolition or relocation of the properties listed in Stipulation I.A. above, the properties will be recorded so that



there will be a permanent record of their existence. The National Park Service (Historic American Buildings Survey (HABS), Rocky Mountain Region, P.O. Box 25287, Denver, CO 80225, (03-236-8675) will be contacted to determine the level of documentation required. All documentation must be accepted by HABS and the Iowa SHPO and the Council notified of that acceptance prior to demolition or relocation. FHWA will provide copies of this documentation to the Iowa SHPO, the Des Moines Historic Preservation Commission and the Iowa Department of Transportation.

### III. SALVAGE

Prior to the demolition or relocation of the properties listed in Stipulation I.A., the Iowa SHPO or his designee will be allowed 30 days to select significant architectural elements for curation or use in other projects. FHWA will carefully remove these elements and will convey them to the Iowa SHPO or his designee.

### IV. LANDSCAPING AND NEW DEVELOPMENT

Plans for development, landscaping or grading adjacent to the Sherman Hill Historic District will be prepared in consultation with the Iowa SHPO and the Des Moines Preservation Commission. Final plans will be submitted to the Iowa SHPO for review and approval.

### V. ARCHEOLOGY

Upon the acquisition of right-of-way and/or demolition or relocation of properties within the project boundaries, including the Riverside Park area and the 15th Street-Tuttle Street Extension, FHWA will conduct additional archeological testing taking into account the professional standards identified in the Council's Manual on Mitigation Measures, and in consultation with the Iowa SHPO. If archeological sites are identified which in the opinion of the Iowa SHPO may be eligible for inclusion in the National Register, a data recovery plan will be developed in accordance with the Council's handbook, Treatment of Archeological Properties, and in consultation with the Iowa SHPO. Data recovery plans will be forwarded to the Iowa SHPO for review and approval within a 15-day period.

### VI. MONITORING

FHWA will forward a status report summarizing actions taken to implement the provisions of this Agreement to the Iowa SHPO and the Council bi-annually. The reports will be due in June and December of each calendar year until the Des Moines CBD Loop Arterial Project is completed.

Execution of this Memorandum of Agreement evidences that FHWA has afforded the Council an opportunity to comment on the Des Moines CBD Loop Arterial Project and its effects on historic properties, and that FHWA has taken into account the effects of the project on historic properties.



*John J. Baker* (date) 10 July '87  
Advisory Council on Historic  
Preservation

*John A. Willard* (date) 7/20/1987  
Federal Highway Administration

*Quillen* (date) 7/29/87  
Iowa State Historic Preservation  
Officer

# E.O. 11593

ARR. 2/21/86

*Price - Petrides*  
File 50137.10

Office of  
Prehistoric Planning

## DETERMINATION OF ELIGIBILITY NOTIFICATION National Register of Historic Places National Park Service

M-2787(1) Polk Co.  
CBD Arterial  
Des Moines

Name of property: Archeological Site 13PK61

Location: Fort Des Moines #2, Polk County

State: IA

Request submitted by: DOT/FHWA H.A. Willard

Date received: 3/28/86

Additional information received:

### Opinion of the State Historic Preservation Officer:

Eligible

Not Eligible

No Response

Comments:

### The Secretary of the Interior has determined that this property is:

Eligible

Applicable criteria:

Not Eligible

Comments:

58 CFR Part 63.3  
Determination

Documentation insufficient

(Please see accompanying sheet explaining additional materials required)

*Jr Alice Campbell*  
Keeper of the National Register  
Determined Eligible

Date: April 9, 1986

IOWA STATE HISTORICAL DEPARTMENT  
DIVISION OF HISTORIC PRESERVATION

---

ADRIAN D. ANDERSON, DIRECTOR  
STATE HISTORIC PRESERVATION OFFICER

September 17, 1982

Mr. David Cook  
Project Planning  
Department of Transportation  
800 Lincoln Way  
Ames, Iowa 50010

RE: Phase I Archaeological Investigation of the CDB Loop Arterial Project  
Area

Dear David:

Our staff has received and reviewed the above referred report. It presents a fine example of the kinds of information possible through Phase I investigations based on establishing a predictive model for a local area. We concur with the findings of the report, and with the recommendations that further archaeological investigations are necessary. These should be conducted during the design stage of the project, and should consider all segments of the project in order to ensure their investigation no matter what the final funding.

Thank you for your assistance in completing the review process. If you have any questions, do not hesitate to call our office.

Sincerely,

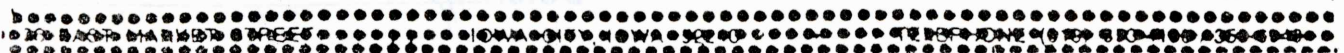


Adrian D. Anderson, Director  
State Historic Preservation Officer

ADA/clk

cc:

Lowell Richardson  
Jim Thompson





IOWA STATE HISTORICAL DEPARTMENT  
OFFICE OF HISTORIC PRESERVATION

DAVID CROSSON, EXECUTIVE DIRECTOR

~~XXXXXXXXXXXXXXXXXXXXXXXXXXXX~~  
STATE HISTORIC PRESERVATION OFFICER

October 21, 1985

Mr. H.A. Willard  
Division Administrator  
FHWA  
P.O. Box 627  
Ames, Iowa 50010

Re: Des Moines CBD Loop

Dear Mr. Willard:

We have completed our architectural/historical review of the above referenced project and are recommending clearance for all properties except for twenty-five which appear to be eligible for the National Register of Historic Places. Two buildings are individually eligible for the Register while the remaining twenty-three have been rated as contributing structures in a proposed expansion of the Sherman Hill National Register District. Individually eligible properties are as follows:

1. Clifton Heights United Presbyterian Church, 1218 Indianola Road. Constructed in 1923, this church has local architectural significance because of its art deco styling. Art deco buildings are not common either in Des Moines or the state as a whole and usage of this style for a church is very rare. The architect Frederic A. Harris designed at least one other significant art deco edifice in Des Moines, the French Way Cleaners building on Euclid Avenue.
2. Capital City Woolen Mills, 113 S.W. 8th Street. This factory was one of the largest and longest lasting manufacturing establishments in the city, operating from 1882 until the 1930's and beyond. Its founders, Abraham and Leopold Sheurman, were one of the city's leading Jewish families and encouraged Jewish settlement in Des Moines by offering charitable assistance and employment in their mills.

The following properties were determined to be contributing to the architectural or historical significance of Sherman Hill and were recommended for inclusion in an expanded National Register



District proposed in a 1981 master plan partially funded by our office:

3. House at 940 19th Street, Tract 1-2
4. House at 944 19th Street, Tract 1-1
5. House at 1919 Crocker Street, Tract 1-16
6. House at 860 Harding Road, Tract 1-18
7. House at 856 Harding Road, Tract 1-19
8. House at 836 Harding Road, Tract 1-20
9. House at 832 Harding Road, Tract 1-21
10. House at 828 Harding Road, Tract 1-22
11. House at 814 Harding Road, Tract 1-23
12. House at 810 Harding Road, Tract 1-24
13. House at 1936 Crocker Street, Tract 1-26
14. House at 855 Harding Road, Tract 1-27
15. House at 835 Harding Road, Tract 1-28
16. House at 2005 Leyner Street, Tract 1-29
17. House at 2008 Leyner Street, Tract 1-30
18. House at 2004 Leyner Street, Tract 1-31
19. House at 2019 Woodland, Tract 1-39
20. House at 2015 Woodland, Tract 1-40
21. Building at 1907-07 Cottage Grove, Tract 1-46
22. Apartments at 934-36 19th Street, Tract 1-3
23. Apartments at 924-25 19th Street, Tract 1-4
24. Apartments at 1920 Cottage Grove, Tract 1-13
25. Building at 1909 Cottage Grove, Tract 1-15

We will be meeting on October 22, 1985 with staff from your office, IDOT, the City of Des Moines, and Brice, Petrides & Associates to discuss these properties in accordance with 36 CFR, Part 800.

Sincerely,



Dr. Lowell J. Soike, Director  
Deputy State Historic Preservation Officer

cc: David Cook, IDOT  
Mary Neiderbach, City of Des Moines Planning and Zoning  
Dr. Martha Maxon, Brice, Petrides & Associates ✓  
Mike Quinn, Advisory Council on Historic Preservation





parking lots, sidewalks, buildings and the like are cleared. Sufficient information was provided in the phase II investigations to determine that Site 13PK61 is, in the opinion of our office, eligible for nomination to the National Register of Historic Places.

Fort Des Moines #2 was a frontier military post occupied from 1843-1846. The fort was established to protect the Sauk and Fox (Mesquakie) from white settlers trying to claim lands ceded to the Indians. The fort was the first settlement in central Iowa, and, after abandonment, became the nucleus of The City of Des Moines, which in 1855 became the capitol of Iowa. No standing structures of the fort remain and it had long been assumed that it was totally obliterated by the ensuing urbanization of Des Moines. Archeological remains associated with the fort have been clearly established by the testing program. Materials associated with prehistoric occupation of the river valley and with post-Fort Des Moines were also found. One prominent feature located in the test excavations and associated with 1910-1920s Des Moines is a city landfill.

We request that the Department of Transportation prepare a request for a determination of eligibility (DOE) for Site 13PK61. A copy of the archeological report, this opinion, and the request for a DOE should be submitted to the Federal Highway Administration (FHWA). If the FHWA agrees with these opinions, then FHWA should forward this documentation to the Keeper of the Register with a request for a DOE as provided for in 36 CFR 63. The FHWA then should initiate consultation with the SHPO to apply the criteria of effect.

Should you have any questions or if we can be of further assistance to you, please contact Kay Simpson, Chief, Archeological Surveys, at 515-281-8744

Sincerely,



Dr. Lowell J. Soike, Director  
Deputy State Historic Preservation Officer

LS/ks

cc: Cay Kauffman, FHWA  
Mary Neiderbach, City of Des Moines  
Dr. Martha Maxon, Brice, Petrides, & Associates ✓  
Mike Quinn, ACHP





# United States Department of the Interior

NATIONAL PARK SERVICE  
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

In Reply Refer To:  
ER 83/617

JUL 6 1983

JUL 11 '83 ~~AM~~

Mr. Hubert A. Willard  
Division Administrator  
Federal Highway Administration  
P.O. Box 627  
Ames, Iowa 50010



Dear Mr. Willard:

This is in response to the request for the Department of the Interior's comments on the draft environmental/Section 4(f) statement for CBD Loop Arterial (I-235/Harding Road to US-65/69), Des Moines, Polk County, Iowa.

## SECTION 4(f) STATEMENT COMMENTS

Sam Cohen Park. We concur that there are no feasible and prudent alternatives to the proposed use of Sam Cohen Park. Measures to minimize harm should include a controlled intersection in the vicinity of the park to assure safe pedestrian access from the northeast, adequate pedestrian walkways, and appropriate landscaping in both the new highway right-of-way and adjacent park areas. Since noise appears to be a serious problem in this park, we recommend that a special effort be made to reduce project related noise levels in the vicinity of Sam Cohen Park, consistent with other urban design considerations.

Hawthorn Park. Since no avoidance alternatives are discussed in the draft statement, we cannot concur at this time that there are no feasible and prudent alternatives to the proposed use of Hawthorn Park. We recommend that special consideration be given to minor modifications in highway geometrics and/or minor alignment shifts to avoid use of this park. If avoidance cannot be achieved, measures to minimize harm should include appropriate landscaping in both the right-of-way and adjacent park areas. In any case, we recommend the provisions of noise walls or berms to reduce project related noise impacts on Hawthorn Park.

Riverside Park. We concur that there are no feasible and prudent alternatives to the proposed use of Riverside Park. However, we recommend that additional attention be given to slight modifications in highway geometrics and/or slight alignment shifts to minimize use of

abatement measures on both the bridge structures and at-grade roadway sections. We are especially concerned about the potential loss of the Technical High School athletic practice fields, and strongly recommend that they be functionally replaced at project expense, either in Water Works Park or at some nearby location.

Additional Parkland Mitigation. In addition to the above site-specific measures to minimize harm to park and recreation areas, your response to the second proviso of Section 4(f) should include, at project expense, replacement land, in-lieu mitigation to restore and upgrade amenities on remaining parkland, and/or monetary compensation, for all parkland lost to the proposed highway. All measures to minimize harm should be coordinated with and approved by the Des Moines Park Department, and resolutions reached should be described in the final statement.

Architectural/Historic Resources. Since no avoidance alternatives are discussed in the draft statement, we cannot concur at this time that there are no feasible and prudent alternatives to the proposed demolition of some five or six historic properties potentially eligible for inclusion on the National Register of Historic Places. We recommend that special consideration be given to site-specific modifications in highway geometrics and/or alignment to avoid the need for demolition. If avoidance cannot be achieved, measures to minimize harm should include relocation, recordation, and/or architectural salvage, as appropriate.

The draft statement indicates that some 31 additional properties of historical/architectural significance that contribute to the values of the Sherman Hills Historic District will also be demolished. These properties, however, are not located on any of the maps, nor is their relationship to the proposed project depicted in the statement. We strongly urge that these properties be treated as Section 4(f) resources, and that special consideration be given to avoidance alternatives, as well as to measures to minimize harm. Decisions reached about all architectural/historic resources should be discussed in the final Section 4(f) statement.

#### POTENTIAL SECTION 6(f) INVOLVEMENT

Land and Water Conservation Fund (L&WCF) assistance was involved in the development of a bike path along both sides of the Des Moines River. Because the proposed project will require that part of the bike path be relocated from its existing location, compliance with Section 6(f) of the L&WCF Act as well as with Section 4(f) may need to be accomplished.

Section 6(f) provides that no property acquired or developed with assistance under this section shall, without the approval of the Secretary of the Interior, be converted to other than public outdoor recreation uses. It also requires the substitution of converted lands with other recreation properties of at least equal fair market value



and of reasonably equivalent usefulness and location. The National Park Service is designated by the Secretary of the Interior to consider approval of Section 6(f) conversion requests upon submission through the State Liaison Officer (SLO) for Outdoor Recreation. To determine specifically whether Section 6(f) applies to the particular portion of the bike path to be relocated, the Iowa SLO should be consulted. This official is Mr. Larry J. Wilson, Director, Iowa Conservation Commission, Wallace State Office Building, East Ninth and Grand, Des Moines, Iowa 50319.

#### ENVIRONMENTAL STATEMENT COMMENTS

The final environmental statement should provide additional information on types and amounts of vegetation to be removed, specific impacts on wetlands and rivers, and use of public lands for activities such as bird watching and fishing.

No Federal threatened or endangered species, or species proposed for such classification, are known to occur in the highway corridor and there is no designated critical habitat in the project area at this time. This precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended. Should the project be modified or new information becomes available that indicates listed or proposed species may be affected, consultation should be initiated.

#### FISH AND WILDLIFE COORDINATION ACT COMMENTS

The draft statement identifies the anticipated need for a Section 404 permit to place fill in a wetland. However, the statement lacks adequate information on anticipated impacts to fish and wildlife and their habitats. The need for mitigation measures is identified but no mitigation alternatives are provided for review. Accordingly, our comments do not preclude separate evaluation and comment by the Fish and Wildlife Service (FWS) when reviewing the permit application(s). Based on available information, the FWS advises that its tentative position would probably be to concur to permit issuance subject to stipulations which will provide adequate mitigation for the filling of the wetland, for the removal of vegetation, and for any alteration of public access to and use of river bank areas.

When appropriate site-specific impact information and mitigation measures are available, the FWS would be pleased to coordinate with you to preclude delay and to ensure that any permit stipulations or conditions are understood and included in the final statement. Please consult with the Field Supervisor, U.S. Fish and Wildlife Service, Rock Island Field Office, 1630 Second Avenue, Rock Island, Illinois 61201 (Telephone: FTS 366-5800 or Commercial (309) 793-5800).



SUMMARY COMMENTS

The Department of the Interior does not concur with Section 4(f) approval of the proposed project at this time. We would be willing to reconsider this position upon receipt of revised documentation that addresses the points mentioned in our comments above.

The final Section 4(f) statement should include a thorough discussion of other alternatives to the use of Section 4(f) lands and properties, and specific measures to be included in the project to minimize harm to Section 4(f) resources, including replacement and/or other adequate compensation for the lands to be taken.

In the meantime, our bureaus at the field level are willing to cooperate and coordinate with you on a technical assistance basis in further project evaluation and assessment. For matters pertaining to cultural, park, and recreational resources, please contact the Regional Director, Midwest Region, National Park Service, 1709 Jackson Street, Omaha, Nebraska 68102 (Telephone: FTS 864-3431 or Commercial (402) 221-3431). For matters pertaining to fish and wildlife resources, please contact the FWS office referenced under FISH AND WILDLIFE COORDINATION ACT COMMENTS above.

We appreciate the opportunity to provide these comments.

Sincerely,

  
Bruce Blanchard, Director  
Environmental Project Review

cc: Mr. C. I. MacGillivray  
Director, Planning and Research Division  
Iowa Department of Transportation  
800 Lincoln Way  
Amos, Iowa 50010

Mr. James A. Thompson  
Director, Traffic and Transportation  
Division  
City Hall  
Des Moines, Iowa 50307

November 14, 1985

Dr. Martha Maxon, Ph.D.  
c/o Brice, Petrides and Associates, Inc.  
191 West Fifth Street  
Waterloo, Iowa 50701

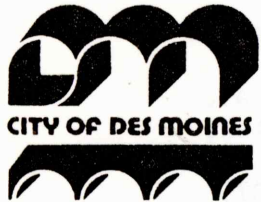
Ref: Des Moines CBD Loop Highway -  
Impacts on Parks  
(Proj. No. M-2787(1)--81-77)

Dear Dr. Maxon:

In response to your request, at its meeting of November 12, 1985 the Des Moines Park and Recreation Board reviewed the preliminary location plans for the Des Moines CBD Loop Bypass Highway. The purpose of that review was to consider the known impacts of the selected highway location alternative on the various park and recreation areas under the Board's jurisdiction.

At that meeting, the Park and Recreation Board reviewed in detail with the staff the various impacts of the proposed highway on nine (9) separate park areas and/or facilities, based on the preliminary route plans presented by your firm to our staff as of this date. Subsequently, the Board took formal action to adopt a list of specific measures it is requesting be included in the highway project to mitigate the impacts of the project on those nine areas and facilities.

Attached for your information and inclusion in the Draft Environmental Impact Statement is a copy of Park and Recreation Board Resolution No. 9196 dated November 12, 1985 (nine pages). It lists the specific impacts recognized and the mitigation measures requested by the Board on a location-by-location basis for the highway project. This is the official record of the Board's action.



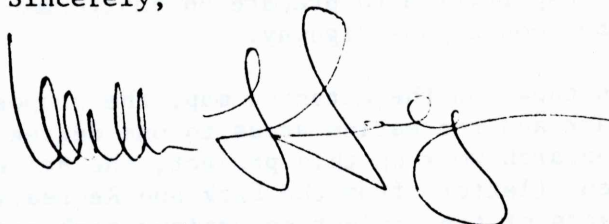
PARK AND RECREATION  
DEPARTMENT  
3226 UNIVERSITY  
DES MOINES, IOWA 50311  
(515) 271-4700

ALL-AMERICA CITY 1949,1976,1981

Please be aware that while requesting these specific mitigatory measures to enhance the park lands remaining after the project is completed, the Park and Recreation Board also voiced its support of the project concept as proposed. The Board appreciates your continued efforts to keep it and our staff fully informed and involved in the project planning process to date.

Your attention to these matters is appreciated. If you have any questions, please feel free to contact me or Mr. Steve Drake of my staff.

Sincerely,

A handwritten signature in black ink, appearing to read "William L. Foley". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

William L. Foley,  
Park and Recreation Director

WLF/mta

Attachments (2) - Map and Resolution No. 9196

xc: Cy Carney, City Manager

James Thompson, Traffic and Transportation Director

James Grant, Planning Director



Des Moines Park and Recreation Board  
DES MOINES, IOWA

PAGE ONE

RESOLUTION NO. 9196

I, Kathern I. Curran, Recording Sec'y of the Des Moines Park and Recreation Board, hereby certify that at a meeting of the Park and Recreation Board of the City of Des Moines, held on November 12, 1985 among other proceedings the following was adopted.

Be it resolved by the Park and Recreation Board of Des Moines, Iowa:

Stephen M. Drake, Landscape Architect for the Park and Recreation Department, advised the Board that the Engineering and Planning firm of Brice, Petrides and Associates of Waterloo, Iowa, has been hired by the City of Des Moines and the Iowa Department of Transportation to prepare an Environmental Impact Statement (EIS) for the proposed CBD Loop Bypass Highway.

As shown on the attached map, the proposed route of the highway will impact several park and recreation areas to one degree or another. As a part of its planning and research work on this project, the Brice, Petrides firm has asked for a formal statement (letter) from the Park and Recreation Board stating that it is aware of the impacts of the project on various park and recreation areas, and further specifying the specific mitigation measures for each affected park or facility that the Board wishes to be included in the project.

Such a letter will become part of the record of this project, and will be included in the Environmental Impact Statement when it is prepared and submitted to the Federal Highway Administration.

1. WOODLAND CEMETERY - Mr. Drake presented the following known impacts of the highway, as presently planned, and mitigation measures as recommended by the staff:

LAND TAKING: None

OTHER IMPACTS: - Increased Noise Levels  
- Increased Visual Pollution  
- Pedestrian Access Changes  
- Vehicular Access Changes  
(Relocate Entrance Gates)

REQUESTED MITIGATION MEASURES:

- Landscaped buffers along Harding Road where possible.
- Maintain secondary access to St. Ambrose Cemetery at Crocker Street.
- Reconstruct entrance gates to exact historical/architectural detail.
- Landscape new entrance gates.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Des Moines Park and Recreation Board the day and year first above written.

(CONTINUED)

STATE OF IOWA  
COUNTY OF POLK  
CITY OF DES MOINES

Des Moines Park and Recreation Board  
DES MOINES, IOWA

PAGE TWO

A RESOLUTION NO. 9196

I, Kathern I. Curran, Recording Sec'y of the Des Moines Park and Recreation Board, hereby certify that at a meeting of the Park and Recreation Board of the City of Des Moines, held on November 12, 1985 among other proceedings the following was adopted.

Be it resolved by the Park and Recreation Board of Des Moines, Iowa:

MOTION NO. 1:

Motion by Tonini to concur with mitigation requests as recommended by staff.

Seconded by Connolly.

ROLL CALL: YEAS: Armington, Connolly, Fontanini, Huck, Muelhaupt, Sanders, Tonini and Muto.

ABSENT: Hayter and Luthens.

Motion Carried.

2. WOODLAND CEMETERY MAINTENANCE SHOP AND OFFICE - (Northeast corner of Woodland and Harding Road) - Mr. Drake presented the following known impacts of the highway, as presently planned, and mitigation measures as recommended by the staff:

LAND TAKING: 0.10 Acres

OTHER IMPACTS: Complete demolition of maintenance shop/office building.

REQUESTED MITIGATION MEASURES:

- PAY CITY FAIR MARKET VALUE OF PROPERTY TAKEN.
- Relocate shop/office to new, comparable facility.  
New facility to be complete and ready for operation before old facility is torn down.

MOTION NO. 2:

Motion by Connolly to concur with mitigation requests as recommended by staff.

Seconded by Muelhaupt.

ROLL CALL: YEAS: Armington, Connolly, Fontanini, Huck, Muelhaupt, Sanders, Tonini and Muto.

ABSENT: Hayter and Luthens.

Motion Carried.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Des Moines Park and Recreation Board the day and year first above written.

(CONTINUED)



I, Kathern I. Curran, Recording Sec'y of the Des Moines Park and Recreation Board, hereby certify that at a meeting of the Park and Recreation Board of the City of Des Moines, held on November 12, 1985 among other proceedings the following was adopted.

Be it resolved by the Park and Recreation Board of Des Moines, Iowa:

3. WEST HIGH FIELD - Mr. Drake indicated that at this time no major impacts are anticipated from the highway as presently planned. There will be slight increases in noise levels over that which is presently experienced from the existing Harding Road.

MOTION NO. 3:

No motion was made since there are no known impacts at this time.

4. CHAMBERLAIN PARK - Mr. Drake indicated that at this time the proposed highway location alternative does not impact Chamberlain Park in any way.

MOTION NO. 4:

No motion was made since there are no know impacts at this time.

5. FRANK DEPUYDT WOODS (Dico Property) - Mr. Drake presented the following known impacts of the highway, as presently planned, and mitigation measures as recommended by the staff:

LAND TAKING: None

OTHER IMPACTS: - Elimination of City's access easement across a portion of Dico, Co., Inc. property.

REQUESTED MITIGATION MEASURES:

- Provide alternate access easements for City maintenance and future public access, at no additional cost to City.

MOTION NO. 5:

Motion by Connolly to concur with mitigation requests as recommended by staff.

Seconded by Huck.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Des Moines Park and Recreation Board the day and year first above written.

(CONTINUED)



I, Kathern I. Curran, Recording Sec'y of the Des Moines Park and Recreation Board, hereby certify that at a meeting of the Park and Recreation Board of the City of Des Moines, held on November 12, 1985 among other proceedings the following was adopted.

Be it resolved by the Park and Recreation Board of Des Moines, Iowa:

MOTION NO. 5:

ROLL CALL: YEAS: Armington, Connolly, Fontanini, Huck, Muelhaupt, Sanders, Tonini and Muto.

ABSENT: Hayter and Luthens.

Motion Carried.

6. WEST RIVERSIDE PARK (Sec Taylor Stadium) - Mr. Drake presented the following known impacts of the highway, as presently planned, and mitigation measures as recommended by the staff:

LAND TAKING: 3.0 Acres

- OTHER IMPACTS:
- Increased Noise Levels
  - Increased Visual Pollution
  - Pedestrian Access Changes
  - Vehicular Access Changes
  - Loss of some parking spaces in Sec Taylor Parking Lot
  - Relocation of Corps of Engineers Levee
  - Rerouting River Drive south of Sec Taylor Stadium (disruption of traffic flow)
  - Loss of 2nd Avenue access to overflow parking lot
  - Possible closure of West Riverside Drive from S.W. 1st to Court Avenue Bridge
  - Demolition/relocation of Public Works' materials storage yard
  - Obstruct future Raccoon River Bike Trail routes along levees
  - Cuts off existing pedestrian access between Sec Taylor Stadium and overflow parking leased by Iowa Cubs on old Pittsburg-Des Moines Steel Co. property

PROPOSED MITIGATION MEASURES:

- PAY CITY FOR FAIR MARKET VALUE OF ALL PROPERTY TAKEN (3 acres).
- Provide landscaped buffers where possible, especially near the Ft. Des Moines Historical Site (Log Cabin).

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Des Moines Park and Recreation Board the day and year first above written.

(CONTINUED)

I, Kathern I. Curran, Recording Sec'y of the Des Moines Park and Recreation Board, hereby certify that at a meeting of the Park and Recreation Board of the City of Des Moines, held on November 12, 1985 among other proceedings the following was adopted.

Be it resolved by the Park and Recreation Board of Des Moines, Iowa:

MOTION NO. 5:

ROLL CALL: YEAS: Armington, Connolly, Fontanini, Huck, Muelhaupt, Sanders, Tonini and Muto.

ABSENT: Hayter and Luthens.

Motion Carried.

6. WEST RIVERSIDE PARK (Sec Taylor Stadium) - Mr. Drake presented the following known impacts of the highway, as presently planned, and mitigation measures as recommended by the staff:

LAND TAKING: 3.0 Acres

- OTHER IMPACTS:
- Increased Noise Levels
  - Increased Visual Pollution
  - Pedestrian Access Changes
  - Vehicular Access Changes
  - Loss of some parking spaces in Sec Taylor Parking Lot
  - Relocation of Corps of Engineers Levee
  - Rerouting River Drive south of Sec Taylor Stadium (disruption of traffic flow)
  - Loss of 2nd Avenue access to overflow parking lot
  - Possible closure of West Riverside Drive from S.W. 1st to Court Avenue Bridge
  - Demolition/relocation of Public Works' materials storage yard
  - Obstruct future Raccoon River Bike Trail routes along levees
  - Cuts off existing pedestrian access between Sec Taylor Stadium and overflow parking leased by Iowa Cubs on old Pittsburg-Des Moines Steel Co. property

PROPOSED MITIGATION MEASURES:

- PAY CITY FOR FAIR MARKET VALUE OF ALL PROPERTY TAKEN (3 acres).
- Provide landscaped buffers where possible, especially near the Ft. Des Moines Historical Site (Log Cabin).

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Des Moines Park and Recreation Board the day and year first above written.

(CONTINUED)



I, Kathern I. Curran, Recording Sec'y of the Des Moines Park and Recreation Board, hereby certify that at a meeting of the Park and Recreation Board of the City of Des Moines, held on November 12, 1985 among other proceedings the following was adopted.

Be it resolved by the Park and Recreation Board of Des Moines, Iowa:

6. PROPOSED MITIGATION MEASURES: (Continued)

- Install fences along R.O.W., restore all turf and pavement areas upon completion of project.
- Prepare revised plan for Sec Taylor Parking Lot for areas affected by highway project. Show realignment of parking spaces, aisles, entrances/exits, etc. Plan to be approved by this Board.
- Design new highway embankment to substitute for Corps of Engineers Levee to prevent additional loss of parking spaces caused by relocation of levee.
- Connect crossover ramps back to Raccoon River Road on east and west sides of new highway. Minimize loss of stadium parking areas.
- Provide new access to north stadium overflow parking area if access to new 2nd Avenue is cut off.
- Arrange with Public Works for relocation and replacement of their existing materials storage yard.
- Provide full closure and removal of West Riverside Drive at S.W. 1st Street and Court Avenue. Convert to pedestrian/bike trail by removing 1 lane of pavement. Construct new Des Moines River Bridge high enough to permit pedestrian/bike trail underpass.
- Provide for future bike trail passage under the new Raccoon River Bridge on the north bank and on the south bank.
- Consult with management of Iowa Cubs to determine their needs and the best way to mitigate the cutoff of pedestrian access to their overflow parking on the old Pittsburg-Des Moines Steel Co. property. Some provision for continued access should be included in the project.

MOTION NO. 6:

Motion by Connolly to concur with mitigation requests as recommended by staff.

Seconded by Tonini.

ROLL CALL: YEAS: Armington, Connolly, Fontanini, Huck, Muelhaupt, Sanders, Tonini and Muto.

ABSENT: Hayter and Luthens.

Motion Carried.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Des Moines Park and Recreation Board the day and year first above written.

(CONTINUED)



I, Kathern I. Curran, Recording Sec'y of the Des Moines Park and Recreation Board, hereby certify that at a meeting of the Park and Recreation Board of the City of Des Moines, held on November 12, 1985 among other proceedings the following was adopted.

Be it resolved by the Park and Recreation Board of Des Moines, Iowa:

7. EAST RIVERSIDE PARK AND BIKE TRAIL - Mr. Drake presented the following known impacts of the highway, as presently planned, and mitigation measures as recommended by the staff:

LAND TAKING: 1.3 acres

OTHER IMPACTS: - Increased Noise Levels  
- Increased Visual Pollution  
- Obstruction of existing Riverfront  
Bike Trail on levee

REQUESTED MITIGATION MEASURES:

- PAY CITY FOR FAIR MARKET VALUE OF LAND TAKEN.
- Provide landscaped buffers where possible.
- Install R.O.W. fences and restore all turf areas upon completion of project.
- Relocate bike trail to "dry" side of levee only.  
Provide underpass for bike trail that is something other than a narrow culvert or a tunnel. If possible, consider extending the new Des Moines River Bridge far enough east to allow for bike trail underpass; or possibly consider a second, smaller bridge over the bike trail just east of the existing levee. Another possibility would be to reroute the existing levee or construct retaining walls to provide for bike trail underpass. Do not route bike trail to river side of levee because of flooding and maintenance problems (wash outs).

MOTION NO. 7:

Motion by Huck to concur with mitigation requests as recommended by staff.

Seconded by Muelhaupt.

ROLL CALL: YEAS: Armington, Connolly, Fontanini, Huck, Muelhaupt, Sanders, Tonini and Muto.

ABSENT: Hayter and Luthens.

Motion Carried.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Des Moines Park and Recreation Board the day and year first above written.

(CONTINUED)

I, Kathern I. Curran, Recording Sec'y of the Des Moines Park and Recreation Board, hereby certify that at a meeting of the Park and Recreation Board of the City of Des Moines, held on November 12, 1985 among other proceedings the following was adopted.

Be it resolved by the Park and Recreation Board of Des Moines, Iowa:

8. SAM COHEN PARK - Mr. Drake presented the following known impacts of the highway, as presently planned, and mitigation measures as recommended by the staff:

LAND TAKING: 0.3 Acres (approx. 1/3 of the park)

- OTHER IMPACTS:
- Significantly increased noise levels
  - Significantly increased visual pollution
  - Significant loss of pedestrian access from residential areas north of the park
  - Loss of 1/3 of the existing park site

REQUESTED MITIGATION MEASURES:

- PAY CITY FOR FAIR MARKET VALUE OF LAND TAKEN.
- Provide for complete relocation and reconstruction of this park at a new site, including relocation of S.E. Water Trough and Yaw Memorial with ancillary facilities. Relocation of park to be at no cost to City. Work with Southeast/Pioneer-Columbus Neighborhood Priority Board, Park and Recreation Department, and this Board in locating and deciding on a new site.

MOTION NO. 8:

Motion by Connolly to concur with mitigation requests as recommended by staff.

Seconded by Huck.

ROLL CALL: YEAS: Armington, Connolly, Fontanini, Huck, Muelhaupt, Sanders, Tonini and Muto.

ABSENT: Hayter and Luthens.

Motion Carried.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Des Moines Park and Recreation Board the day and year first above written.

(CONTINUED)

I, Kathern I. Curran, Recording Sec'y of the Des Moines Park and Recreation Board, hereby certify that at a meeting of the Park and Recreation Board of the City of Des Moines, held on November 12, 1985 among other proceedings the following was adopted.

Be it resolved by the Park and Recreation Board of Des Moines, Iowa:

9. HAWTHORN PARK/S.E. RIVERFRONT PARK - Mr. Drake presented the following known impacts of the highway, as presently planned, and mitigation measures as recommended by the staff:

LAND TAKING: None

- OTHER IMPACTS:
- Increased noise levels
  - Increased visual pollution
  - Pedestrian access changes
  - Obstructs R.O.W. for future riverfront bikeway planned along north side of Des Moines River
  - Obstructs pedestrian connection between Hawthorn Park and S.E. Riverfront Park (east side of S.E. 14th Street)

REQUESTED MITIGATION MEASURES:

- Provide landscaped buffer along S.E. 14th Street.
- Provide public sidewalk along west side of S.E. 14th St.
- Construct bike trail/pedestrian underpass under S.E. 14th St. preferably something other than a culvert or a tunnel.

MOTION NO. 9:

Motion by Sanders to concur with mitigation requests as recommended by staff.

Seconded by Connolly.

ROLL CALL: YEAS: Armington, Connolly, Fontanini, Huck, Muelhaupt, Sanders, Tonini and Muto.

ABSENT: Hayter and Luthens.

Motion Carried.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Des Moines Park and Recreation Board the day and year first above written.

(CONTINUED)



STATE OF IOWA  
COUNTY OF POLK  
CITY OF DES MOINES

Des Moines Park and Recreation Board  
DES MOINES, IOWA

PAGE NINE

RESOLUTION NO. 9196

I, Kathern I. Curran, Recording Sec'y of the Des Moines Park and Recreation Board, hereby certify that at a meeting of the Park and Recreation Board of the City of Des Moines, held on Novvember 12, 1985 among other proceedings the following was adopted.

Be it resolved by the Park and Recreation Board of Des Moines, Iowa:

10. CONCLUDING MOTION - The Board was advised that it would be appropriate to have a motion at this point directing the staff to prepare a letter to the planning consultants and the Plan and Zoning Commission specifying the specific mitigation measures at each park site that the Board has requested in the nine (9) preceeding actions.

MOTION NO. 10:

Motion by Tonini that staff send a letter back to the Planning Consultants and Planning Department informing them of the specific mitigation measures requested for each area and the action of the Board on each request.

Seconded by Muelhaupt.

ROLL CALL: YEAS: Armington, Fontanini, Huck, Muelhaupt, Sanders, Tonini and Muto.

ABSENT: Connolly, Hayter and Luthens.

Motion Carried.

NOTE: Resolution No. 9196 contains ten (10) separate Roll Call actions and recorded votes of the Park and Recreation Board regarding the matter of the planning for the CBD Loop Bypass Highway.

See Attachment "A" - Map.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Des Moines Park and Recreation Board the day and year first above written.

  
Recording Secretary





B.27

PROPOSED ALIGNMENT OF THE DES MOINES CBD LOOP ARTERIAL

ATTACHMENT "A" TO PARK AND RECREATION BOARD RESOLUTION NO. 9196 DATED NOV. 12, 1985







**APPENDIX C**

**COMMENTS RECEIVED ON THE  
DRAFT SECTION 4(f) STATEMENT**

APPENDIX C

INDEX

	<u>Page</u>
Letter from U.S. Department of Interior - February 12, 1987-----	C.1
Letter from U.S. EPA - February 19, 1987-----	C.3
Letter From Iowa Department of Natural Resources - February 9, 1987-----	C.4
Letter from Iowa State Historical Department - January 13, 1987-----	C.6
Letter from Polk County Physical Planning Department - January 20, 1987-----	C.7
Letter from Des Moines Park and Recreation Department - February 6, 1987-----	C.8
Letter from Des Moines Water Works - January 6, 1987-----	C.11

Rep/DM3/AA9



United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW  
WASHINGTON, D.C. 20240



ER 86/1479

FEB 12 1987

Mr. Hubert A. Willard  
Division Administrator  
Federal Highway Administration  
P.O. Box 627  
Ames, Iowa 50010

Dear Mr. Willard:

This is in response to the request for the Department of the Interior's comments on the draft Section 4(f) statement for CBD Loop Arterial, Des Moines, Polk County, Iowa.

SECTION 4(f) STATEMENT COMMENTS

The Department of the Interior commented on a previous draft environmental/Section 4(f) statement for the proposed project on July 6, 1983. We now concur that there are no feasible and prudent alternatives to the use of land from the several Section 4(f) resources described in Table 1 on page 5 of the draft statement. We also concur that the statement includes all possible planning to minimize harm, providing that the final statement describes resolution reached on compliance with Section 6(f) of the Land and Water Conservation Fund (LWCF) Act with regard to land to be taken from the asphalt bike path along the east side of the Des Moines River.

The National Park Service (NPS) is designated by the Secretary of the Interior to consider approval of Section 6(f) conversion requests upon submission through the official who administers the LWCF program in the State of Iowa. As stated on page 31 of the draft statement, this official is the Iowa State Liaison Officer, Iowa Department of Natural Resources. Please note that NPS will consider the application for conversion of the Section 6(f) land only after Section 4(f) approval by the Department of Transportation.

SUMMARY COMMENTS

The Department of the Interior offers no objection to the Section 4(f) approval of this project, providing an acceptable Section 6(f) replacement package, as noted above, is described in the final statement.

The Iowa State Liaison Officer, Iowa Department of Natural Resources, has been contacted regarding the Section 6(f) conversion of the bike path. Refer to letter from this agency on page C.4 of this appendix.

C.1



Mr. Hubert A. Willard

2

Please contact the Regional Director, Midwest Region, National Park Service, 1709 Jackson Street, Omaha, Nebraska 68102 (telephone FTS 864-3431 or commercial 402-221-3431), for technical assistance concerning park and recreational matters, and for further coordination on the project's Section 6(f) involvement.

Thank you for the opportunity to provide these comments.

Sincerely,

  
Bruce Blanchard, Director  
Environmental Project Review

cc:

Mr. Harry S. Budd  
Director, Office of Project Planning  
Planning and Research Division  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, Iowa 50010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII  
726 MINNESOTA AVENUE  
KANSAS CITY, KANSAS 66101

February 19, 1987

Mr. H. A. Willard  
Division Administrator  
Federal Highway Administration  
U.S. Department of Transportation  
P. O. Box 627  
Ames, Iowa 50010

RE: Section 4(f) Statement for the CBD Loop  
Arterial, Des Moines, Polk County, Iowa

Dear Mr. Willard:

In accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act, we have reviewed the draft Supplement to the Environmental Impact Statement (DSEIS) for the project identified above. This Supplement consists of a Section 4(f) Statement which addresses impacts to publicly-owned lands.

Consistent with our previous comments on the draft EIS for the CBD Loop Arterial, we have no comments specific to the Section 4(f) Statement. Consequently, we have rated the draft Supplement "LO," meaning we have no objections to the project as it applies to Section 4(f) involvement.

No response necessary.

Thank you for the opportunity to review and comment on this document. If you have questions, please contact Lynn Krings of my staff at 913/236-2823 (FTS 757-2823).

Sincerely yours,

Edward C. Vest  
Chief, EIS Section

cc: FHWA - Ken Bechtel  
IDOT - Lowell Richardson

024 07 48



C.3



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
LARRY J. WILSON, DIRECTOR

February 9, 1987

Mr. James A. Thompson, Director  
Traffic and Transportation Department  
City of Des Moines  
City Hall  
Des Moines, Iowa 50307

RE: Des Moines CBD Loop Arterial  
Des Moines, Polk County, Iowa  
Project No. M-278(1)-81-77

Dear Mr. Thompson:

This agency has reviewed the Draft Section 4(f) statement for the Des Moines CBD Loop Arterial, Polk County, Iowa.

The design as outlined in this statement includes three new river crossings of the Raccoon River and one crossing of the Des Moines River. Each of these crossings is located across the flood plain and over the meandered portion of these streams, and each would require permits from this agency prior to any construction. As information and plans become more definitive this agency will coordinate with you on these approvals.

Land and Water Conservation Fund (L&WCF) assistance was involved in the developments and bike paths along the Des Moines Riverfront areas. Any proposed disturbance of these areas or relocation of this bike path should be coordinated with this agency for approval of the 6(F) conversion that will/or may occur as a result of this project.

Impacts to fish and wildlife species and habitats were not addressed in this statement. Mitigation efforts may be in order, especially at the wetland site under the proposed relocated East 15th Street and at all river crossings.

During this review, our Preserves and Ecological Services Bureau indicated no records of rare species or unique natural areas. However, field investigations are necessary before this finding can be construed as anything more than a lack of information in the existing data base.

The alignment of the proposed route east of the Raccoon River will possibly cross several toxic waste sites, one referred to as Des Moines TCE or (Dico Site). Further investigation of this alignment should be completed before proposed digging at this location. The excavation for bridge abutments could possibly disturb this site with adverse effects to water quality.

These impacts were adequately addressed in the accompanying Final EIS for this project. They are not within the scope of a Section 4(f) Statement.

This matter is being coordinated with the appropriate office of the U.S. EPA.

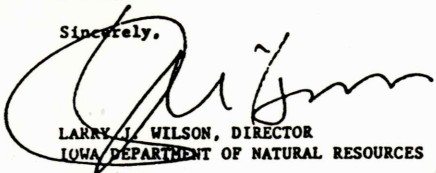
C.4



Mr. James A. Thompson, Director  
February 9, 1987  
Page 2

Thank you for the opportunity to review and comment on this statement. If you have any questions please feel free to contact this agency to discuss your concerns.

Sincerely,

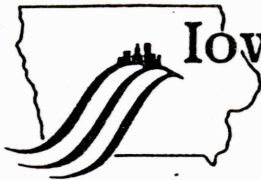


LARRY J. WILSON, DIRECTOR  
IOWA DEPARTMENT OF NATURAL RESOURCES

mk/HI

C.5





Iowa

State Historical Department

East 12th and Grand Avenue, Des Moines, Iowa 50319  
(515) 281-5111

1987

Mr. James A. Thompson, Director  
Traffic and Transportation Department  
City of Des Moines  
City Hall  
Des Moines, Iowa 50307

RE: DRAFT SECTION 4(F) STATEMENT, CBD LOOP ARTERIAL, DES  
MOINES, POLK COUNTY, IOWA.

Dear Mr. Thompson:

We have reviewed the draft 4(f) statement for the above  
referenced project and find that our previous comments and  
recommendations have been adequately incorporated into the  
document. We do recommend that the Memorandum of Agreement be  
signed by the Advisory Council of Historic Preservation before  
the final report is issued.

Refer to Appendix B for signed Memorandum of Agreement.

Sincerely,

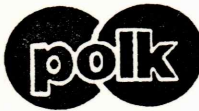
Carol L. Ulch, Ph.D.  
Deputy State Historic Preservation Officer

CLU/ks

cc: Cay Kauffman, FHWA

C.6

1987



POLK COUNTY PHYSICAL PLANNING DEPARTMENT

January 20, 1987

8006 N.E. 14th Street  
Des Moines, Iowa 50319

- Administration  
206-3367
- Building Inspection  
206-3352
- Planning-Zoning  
206-3358
- Real Estate  
206-3368
- Environmental  
Sanitation  
206-3376
- Animal Control  
206-3378
- 9842 Mahan Road  
Des Moines, Iowa 50314
- Air Pollution Control  
206-2927

Mr. James A. Thompson  
Traffic and Transportation Department  
City of Des Moines  
City Hall  
Des Moines, IA 50307

Dear Jim:

Draft Section 4(f) Impact Statement for the proposed CBD Loop Arterial has been reviewed for potential environmental impact on air quality.

The proposed project has potential impacts in both carbon monoxide and particulate primary non-attainment areas. These are areas which have not met federal health standards for air quality.

Review of the impacts on carbon monoxide are quite favorable. Multi-lane divided roadways of adequate capacity are extremely unlikely to result in high carbon monoxide values. Intersections resulting from this project appear to improve existing traffic flows. Most significantly, this project should have a profound impact on reducing delay and pollutant concentrations in the CBD.

The draft statement of December 12, 1986, did not contain sufficient detail to resolve some questions concerning airborne particulate. Specific concerns center on heavy duty vehicle access eastbound on Scott Street. Potential problems in this area could be alleviated by paving Scott Street or transportation control measures limiting heavy duty vehicles to paved roadways.

Sincerely,

Gary L. Pryor  
Director

GLP/ske

Scott Street east of E. 15th Street is beyond the construction limits of this project, and the traffic volumes and resulting TSP from this road will not change significantly with the proposed construction. Therefore, measures to reduce the airborne particulate are beyond the scope of this project.

JAN 21 87



C.7



CITY OF DES MOINES, IOWA

Office of

PARK AND RECREATION DEPARTMENT

TO James A. Thompson,  
Traffic and Transportation Director

DATE February 6, 1987

FROM John M. De Lorenzo *JML*  
Park and Recreation Director

SUBJECT: CBD Loop Arterial,  
Comments on "DRAFT"  
Section 4(f) Statement

Reference is made to the Draft Section 4(f) Statement for the CBD Loop Arterial Highway dated December 12, 1986 and prepared by Brice, Petrides-Donahue.

In general, we find the report is very well written and much improved over the previous draft version which we reviewed in January, 1986. Many of the comments made at that time by the former Park and Recreation Director have been satisfactorily addressed, particularly with regard to Woodland Cemetery and the Riverfront Park/Open Space areas.

As we understand it, this report addresses the impacts of the proposed highway construction on properties included in or eligible for inclusion in the National Register of Historic Places. It also addresses the impacts on public parks and open spaces, as well as known historical/archeological sites.

To this end, we feel the report adequately and satisfactorily describes the proposed impacts and mitigation measures on properties fitting the above categories. However, as the department indicated in its communication of January 26, 1986, neither the previous report nor this revised version address all of the impacts to all of the City-owned park and recreation facilities and open space lands along the proposed route.

As previously indicated by the Park and Recreation Board in November, 1985 (see Pages B.14 through B.26 of this report), there are several other park properties owned by the City that will be impacted by this highway which are not addressed in this limited report. We understand the reasons for this and we understand the difference between "National Register Properties" and "other" park lands, but we feel it is important to note that other adverse environmental impacts to other City-owned park properties are anticipated as a result of this project in addition to those discussed in this report.

Park and Recreation Board Resolution No. 9196 dated November 12, 1985 (nine pages) lists all of the affected properties and all of the mitigations that the board expects the project to provide; and we would call attention to those again so as not to lose sight of them in the planning process.

Regarding the specific report at hand, we have the following procedural/textural comments:

1. Page 13 - The vacant residential structure at 2019 Woodland Avenue is a City-owned building under the jurisdiction of the Park and Recreation Department. It is the former residence of the Woodland Cemetery Supervisor, and we have been trying to have it moved or demolished for several years.
2. Page 14 - ("Woodland Cemetery Entrance Gate") - The relocation of the entrance gate is not objectionable to this department provided the project includes sufficient funding to reconstruct the gates to their original design and materials. The reconstruction project must be architecturally and historically correct.
3. Page 14 - ("Avoidance Alternatives") - If the highway was considered to be too noisy and too congested for a residential neighborhood, then it is likely to have a significant impact on the quiet and pastoral nature of the adjacent cemetery. We think the proposed environmental mitigations should include the possibility of constructing a protective noise barrier or wall along the east side of Woodland Cemetery.
4. Page 23 - Although the "Preferred Alternative" for the new highway was shifted south to avoid the Old Fort Des Moines building foundations, it was also moved closer to the historic Ft. Des Moines log cabin. The report should explain this negative impact in more detail (Ref. Page 28).
5. Page 25 and Following - All references to the "Des Moines Park Board" should be changed to read "Des Moines Park and Recreation Board".
6. Plate 17 - This drawing does not reflect the wishes of the Des Moines Park and Recreation Board with regard to the design and layout of roads/access ramps into and out of the Sec Taylor Stadium Parking Lot.

The riverfront roadway and the access ramps from the parking lot to the new highway should be changed to correspond to the site plan sketch which accompanied Park and Recreation Board Resolution No. 9196 dated November 12, 1986 (See Page B.26 of this report.

This property is not a Section 4(f) property.

This request has been incorporated into the project plans (refer to page 16 of this Statement).

FHWA regulations do not provide for noise abatement measures for cemeteries.

The Preferred Alternative will not be closer to this cabin than were the other alternatives. The location of this cabin is not its original location, and it presumably could be moved further to the south, if it is felt necessary by the Park and Recreation Board, without any loss of historic significance.

Project plans are in the concept stage as presented in this document. During the final design of the project, coordination will be maintained with the Park and Recreation Board to develop an acceptable design adjacent to Sec Taylor Stadium.

We appreciate the opportunity to review and comment on this report. If you have any questions or need additional information please feel free to contact me or Steve Drake of my staff (271-4732).

JMD/mta

xc: James M. Grant, Planning Director  
Harold E. Smith, City Engineer  
Stephen M. Drake, Landscape Architect  
Jack Mueller, Park Superintendent  
Robert C. Eldredge, Recreation Superintendent

C.10

FEB 14 37 PM



TRANS DEPT





**DES MOINES**  
Board of  
Water Works  
Trustees  
**WATER  
WORKS**

2201 Valley Drive  
Des Moines, Iowa 50321-1190  
(515) 283-8755  
L. D. McMullen, Ph.D., P.E.  
Secretary and General Manager



January 6, 1987

Mr. James A. Thompson, Director  
Traffic & Transportation Dept.  
City of Des Moines  
E. 1st and Des Moines St.  
Des Moines, IA 50307

SUBJECT: Central Business District Loop Project

Dear Jim:

We have completed our review of the final Draft Section 4(f) Statement for the Central Business District Loop project and offer the following comments.

First, we would like to re-emphasize that construction of this project will create a significant elevated noise level in the area of our Pumping Station which will have a negative impact on the facility. We don't have a good solution to this problem and perhaps little can be done to reduce the noise level in the treatment plant area, however, we feel it will have a definite effect on our operation.

Another point to be considered is the fill material proposed to be placed over our existing piping in various areas. In the event of main breaks or valve failures within these deep fill areas, our maintenance costs could be increased substantially. Not to mention the number of pipelines which would need to be relocated as a result of proposed cuts in the roadway. We are hopeful that reimbursement for these costs can be incorporated in the ultimate project plan if at all possible.

Finally, I would like to reinforce a concept that was discussed previously with your consultant. We feel it is desirable that the storm water drainage system for the area be designed to convey storm water to a point below the Water Works dam. As you are well aware, we are now in the process of cleaning up a TCE contamination located on the east side of the Raccoon River and I would not want to promote any type of project that would increase the risks associated with contaminant spills entering our north gallery. I'm fully aware of the possibility that a chemical

Noise abatement measures are not feasible for this location.

These costs were included when the project cost estimates were developed.

This concept will be included during the final design of the project.

Page Two

truck could go off of the road and result in a spill that the storm water system could not accommodate. However, I am more concerned with rear-end collisions or overturned trucks on the roadway and the conveyance of any resulting contaminants to a water course that would not affect the water supply.

Again, I want to thank you for the opportunity to comment on the final draft, and if we may be of any further assistance as the project develops please feel free to contact us.

Sincerely,

*L.D. McMullen*

L.D. McMullen, Ph.D., P.E.  
General Manager

LDM/crw

cc: Randy Beavers, Director of Engineering Services

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