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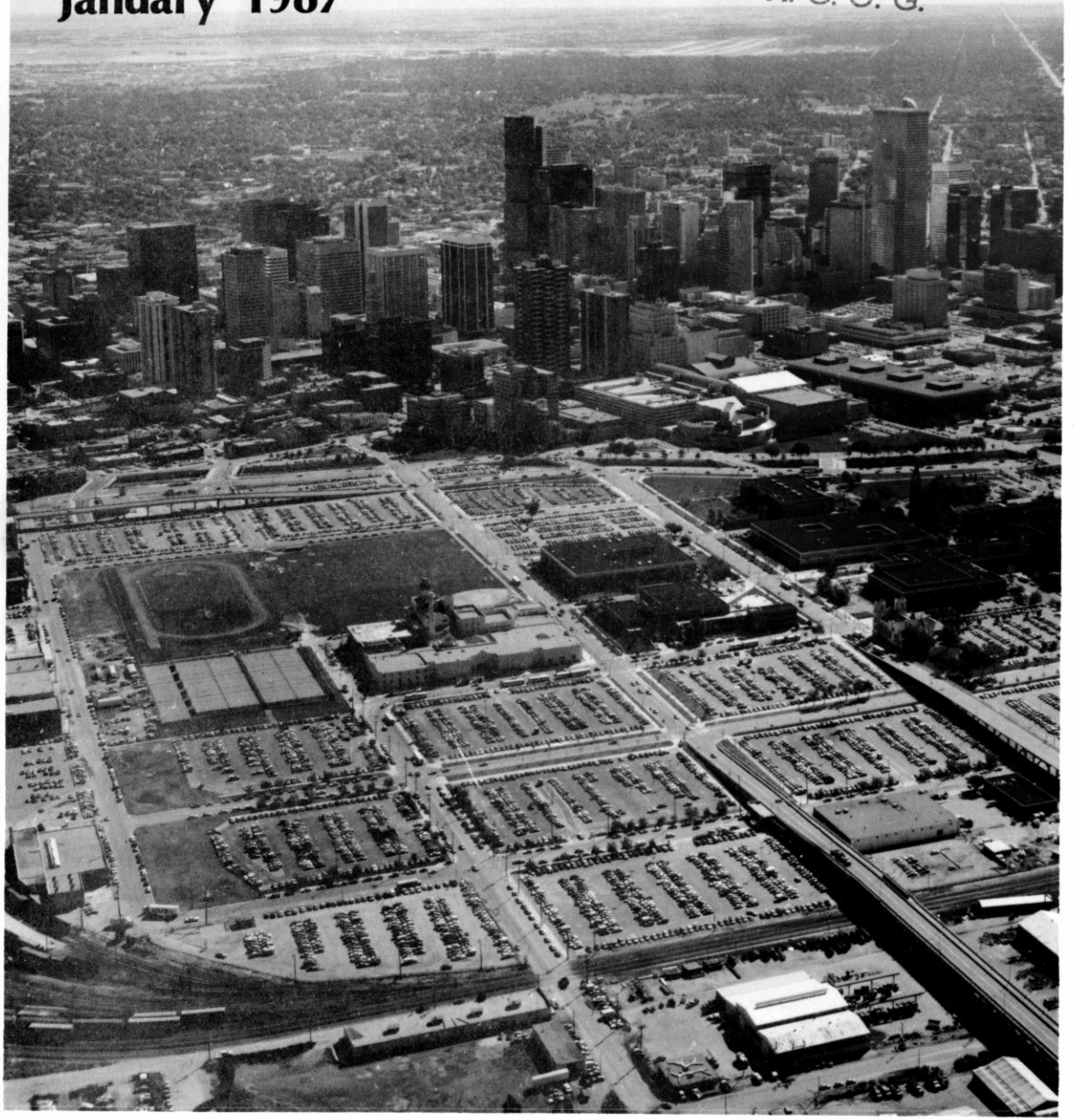
AURARIA PARKWAY Environmental Assessment

Project C-CC 01-0033-01

January 1987



AURARIA PARKWAY
ENVIRONMENTAL ASSESSMENT
PROJECT C-CC 01-0033-01

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
COLORADO DEPARTMENT OF HIGHWAYS
THE CITY AND COUNTY OF DENVER
AND
THE AURARIA HIGHER EDUCATION CENTER

SUBMITTED PURSUANT TO:
42 U.S.C. 4332(2)(C) AND 23 U.S.C. 128(a)
EXECUTIVE ORDER 11988

SUBMITTED BY:

Robert L Clevenger

ROBERT L. CLEVENGER
CHIEF ENGINEER
COLORADO DEPARTMENT OF HIGHWAYS

1-9-87
DATE

CONCURRENCE BY:

Joseph Dolan

JOSEPH DOLAN
EXECUTIVE DIRECTOR
COLORADO DEPARTMENT OF HIGHWAYS

1-12-87
DATE

ADOPTED BY:

William C Jones

FOR LEON J. WITMAN
DIVISION ADMINISTRATOR
FEDERAL HIGHWAY ADMINISTRATION

1/14/87
DATE

INFORMATION AVAILABILITY

The following individuals may be contacted for further information regarding the proposed project and the Environmental Assessment.

MR. LEON J. WITMAN
Division Administrator
Colorado Division
Federal Highway Administration
555 Zang Street, Room 250
Lakewood, CO 80228
(303) 236-3372

MR. ROBERT L. CLEVENGER
Chief Engineer
Colorado Department of Highways
4201 East Arkansas
Denver, CO 80222
(303) 757-9204

MR. RICHARD J. BRASHER
District Engineer
Colorado Department of Highways
2000 South Holly
Denver, CO 80222
(303) 757-9252

MR. GREGORY E. MUGELE
Project Manager
Colorado Department of Highways
2000 South Holly
Denver, CO 80222
(303) 757-9372

MR. ROBERT DORROH
Chief Design Engineer
City and County of Denver
5440 Roslyn Street
Denver, CO 80216
(303) 289-5440

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CHAPTER 1:

DESCRIPTION OF THE PROPOSED PROJECT

Background

Much of the information contained in this Environmental Assessment (EA) was prepared for the City and County of Denver by several consultants and is presented in the Auraria Parkway Corridor Study. The stated purpose of that study, which was completed in June 1986, was to assess the feasibility of alternative Parkway alignments and to identify opportunities for pedestrian improvements and urban redevelopment within the project area. The three alternative alignments that were selected in the study for detailed evaluation and the one that was recommended therein for construction are the same as the alternatives considered and the proposed project described in this EA (in Chapters 1 and 3, respectively). A copy of the Auraria Parkway Corridor Study is available for review at the Denver Planning Office (575-2120) and at the District 6 offices of the Colorado Department of Highways (757-9372).

Project Location

The proposed project is located in central Denver, a short distance east of I-25 and north of the Colfax Viaduct (see Figure 1).

Parkway Alignment

The proposed construction of the recommended Parallel Mall alternative will provide an urban parkway along a new alignment approximately two-thirds of a mile in length. As shown in Figure 2, the new roadway will connect the east end of the new Walnut Viaduct, at 7th Street between Walnut and Wazee Streets, to the Downtown Denver street grid via Market and 14th Streets inbound and 15th and Blake Streets outbound.

Initially, three through lanes are proposed in each direction. Auxiliary left turn and right turn lanes will be provided at the signalized, full movement intersections at 7th and 9th Streets. There will be a full movement intersection at 11th Street, and a partial intersection at 12th Street. Right-of-way will be reserved for four lanes in each direction.

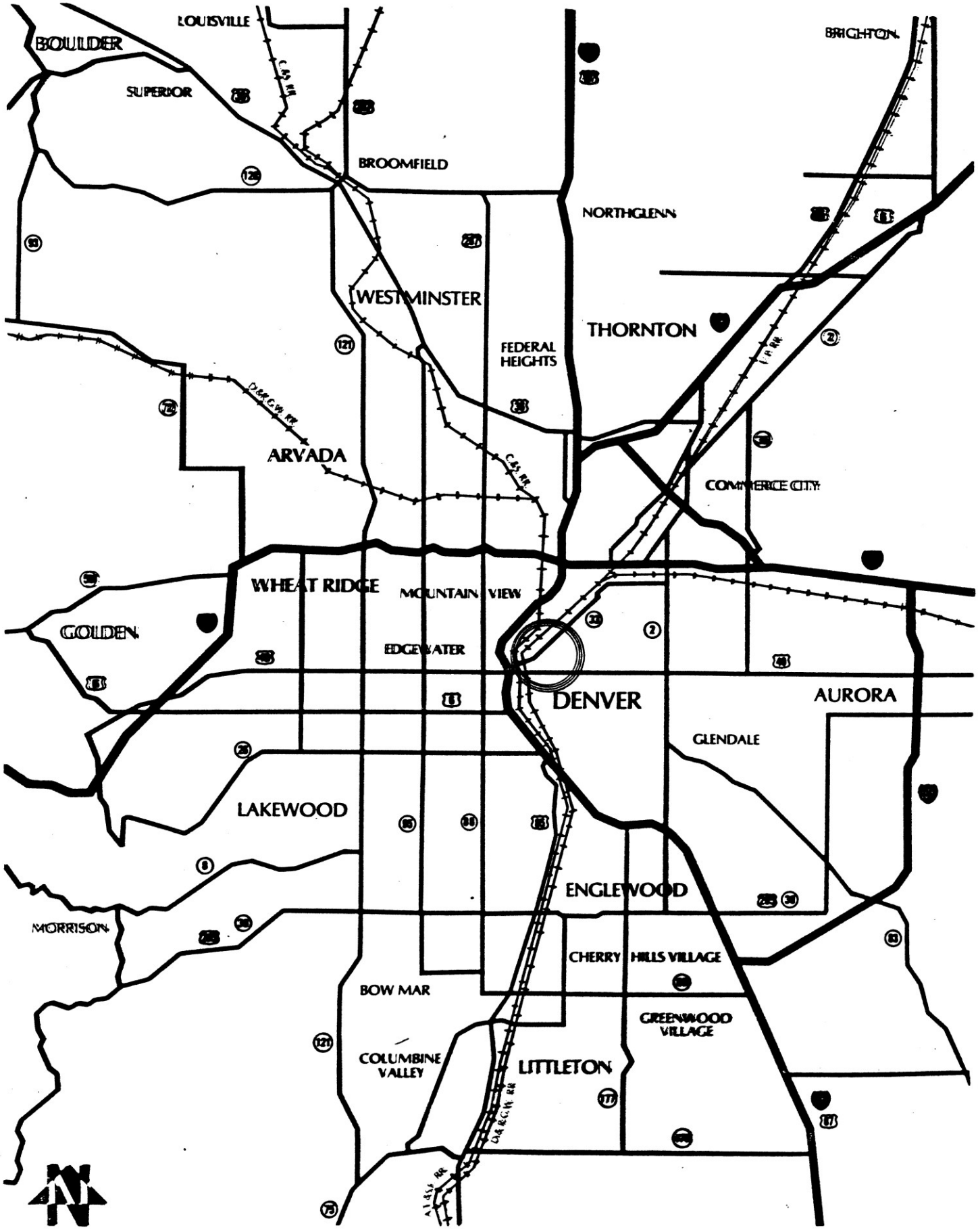

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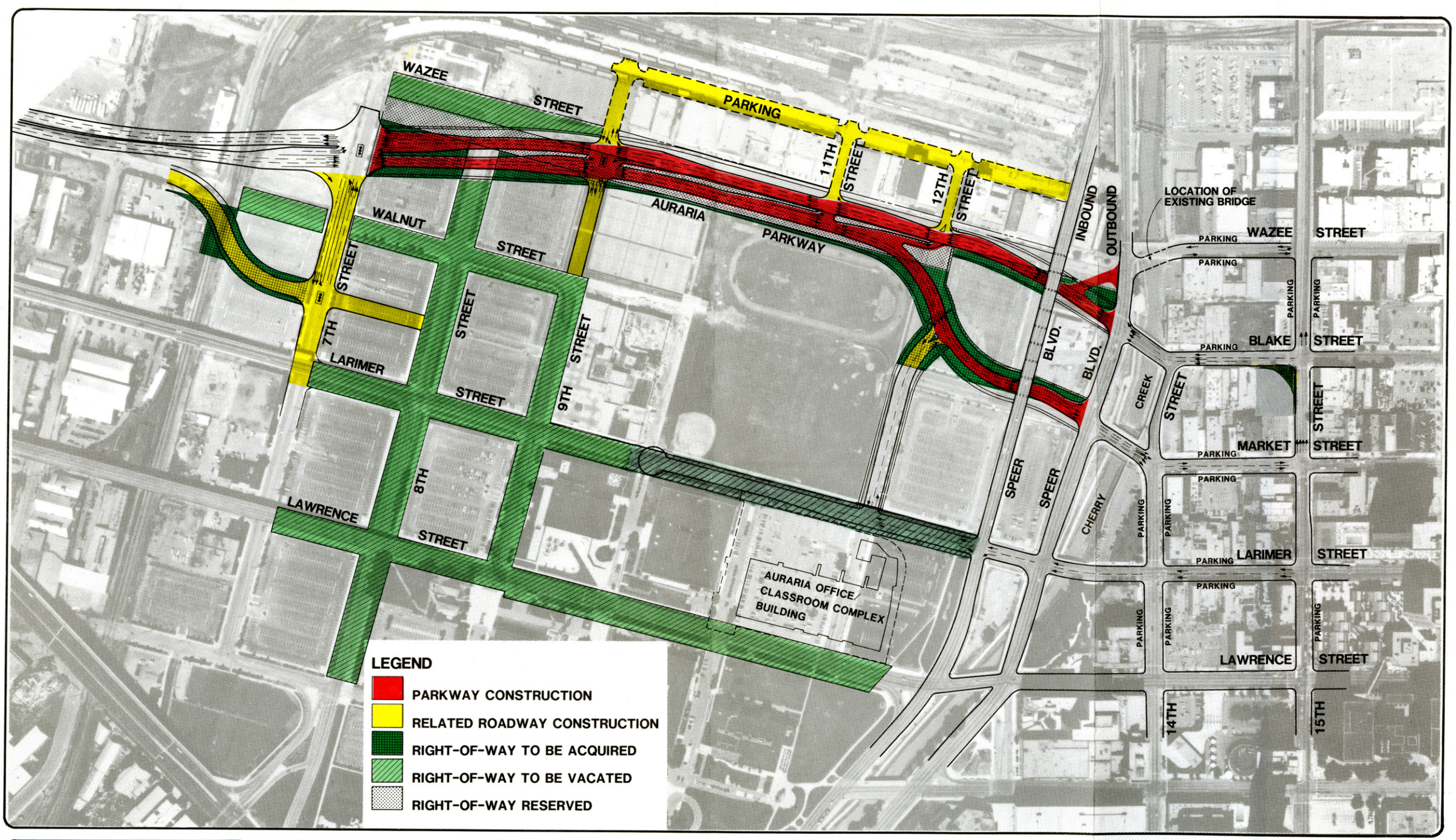
FIGURE 1
PROJECT LOCATION



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BRW INC. PLANNING TRANSPORTATION ENGINEERING ARCHITECTURE
4643 S. ULSTER STREET, SUITE 1180, DENVER, CO 80237

FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

0 175' 350' 700'

north

MAJOR ELEMENTS OF THE RECOMMENDED PARALLEL MALL ALTERNATIVE

FIGURE 2

Near 12th Street the Parkway will split so that the eastbound lanes will cross the Market Street bridge over Cherry Creek and the westbound lanes will cross at Blake Street. At the east end of the Market bridge, the intersection of Market and 14th Streets will be signed and the pavement striped to direct the primary inbound downtown traffic to the right onto 14th Street.

Trips destined for southbound I-25 from upper downtown will be rerouted from Larimer Street to one-way 15th and Blake Streets and the new westbound Parkway. The intersection design that is proposed at 15th and Blake, with triple left turn lanes from a one-way northbound 15th Street will prohibit vehicles southbound on the 15th Street Viaduct from entering the intersection. Therefore, traffic on the viaduct (and on 15th Street between Market and Blake) will be changed from two-way to one-way northbound. Local traffic will still be able to enter and exit the at-grade area on 15th Street below the viaduct via the 15th/Blake intersection (see Figure 3).

Major Project Elements

Construction of the proposed project will include the following elements in addition to the previously described Parkway (see Figure 2).

1. Walnut Street between 6th and 9th Streets will be closed because its proximity to the touchdown point of the Walnut Viaduct (less than 200 feet) poses operational problems for traffic flow. Access to the industrial area beneath the Walnut Viaduct will be provided via a new local street between Walnut and Larimer Streets. A new alignment will be constructed instead of an at-grade alignment along Larimer to maintain more direct access to existing Walnut Street. This street will begin west of 7th Street and curve north to connect with existing Walnut Street just west of 6th Street. The new intersection on 7th Street will be signalized. The eastern leg of that intersection will be a private street leading to the parking area for the Tivoli Denver.

2. A new parking area will be built behind the businesses north of existing Wazee Street. The paved area will extend from 9th Street to inbound Speer Boulevard, and will have full access to the Parkway at 9th and 11th Streets, and limited access at 12th Street.

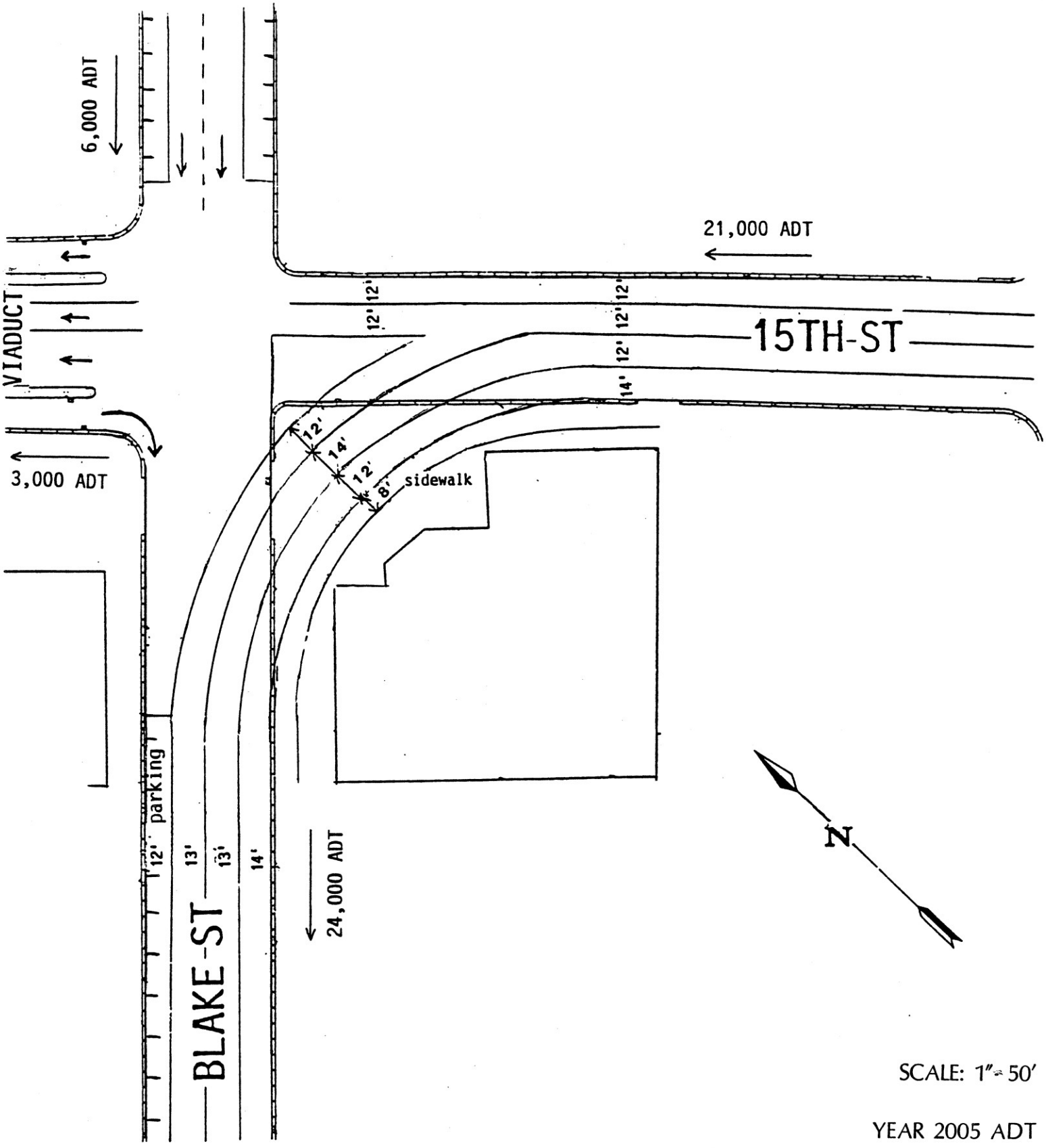

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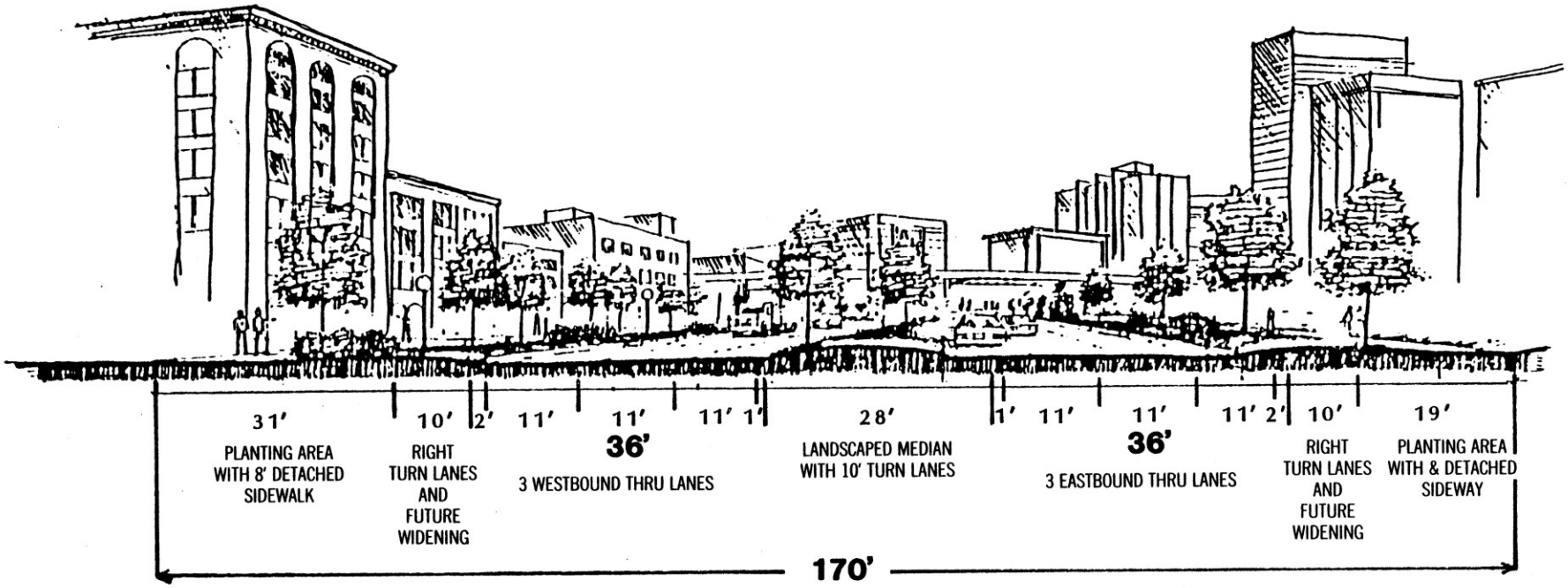
FIGURE 3
DETAIL OF PROPOSED 15TH/BLAKE STREET INTERSECTION

3. A temporary, three quarters movement intersection will be built to connect existing 12th Street to the eastbound Parkway, allowing for left-in, right-in, and right-out movements at that location to provide access to southbound Speer Boulevard until the Speer Viaduct is replaced (as discussed in Chapter 4).

4. As shown in Figure 4, the typical cross-section of the proposed Parkway will provide for a landscaped median varying from 8 to 28 feet in width, and two landscaped strips immediately outside of the travel lanes. A sidewalk varying in width from 8 to 16 feet will serve the businesses along existing Wazee Street within a continuous 31-foot planting area. A 10-foot walkway/bikepath will be built next to the Auraria Campus within a continuous 19-foot landscaped strip south of the Parkway. No on-street parking will be permitted along the Parkway between the Walnut Viaduct and 14th Street.

   A fourth through lane in each direction may eventually be needed along the Parkway. Therefore, permanent landscaping will be concentrated along the outside portions of the strips flanking the roadway, and only minimal landscaping along the inside 12 feet.

5. Several rights-of-way within the Auraria Campus will be transferred to the Auraria Higher Education Center (AHEC) and closed to through traffic at different points in time after the Parkway is opened to traffic. As shown in Figure 2, Wazee between 7th and 9th Streets, Walnut between 6th and 9th Streets, Larimer west of 10th Street, Lawrence between 7th and Speer, 8th Street between Arapahoe and the new Parkway, and 9th Street between Walnut and Larimer may eventually be closed to general traffic. The transfer of these public streets will compensate AHEC for the right-of-way (ROW) required for the Parkway. Some of the existing rights-of-way will be converted to parking lots when AHEC develops a new parking plan. AHEC's decision on any such plan is not a part of the proposed project. The City and County of Denver will reserve the ROW within the campus that is needed to preserve the option of future Larimer/Lawrence connections to the Parkway until capacity improvements to the Colfax corridor have been ensured (see Chapter 4's Traffic Operations Impacts Section). Larimer between Speer and 10th Street will become a two-way transit corridor as discussed in the next section of this chapter.



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BRW

FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

CROSS SECTION OF THE PROPOSED PARKWAY

FIGURE 4

Related Project Elements

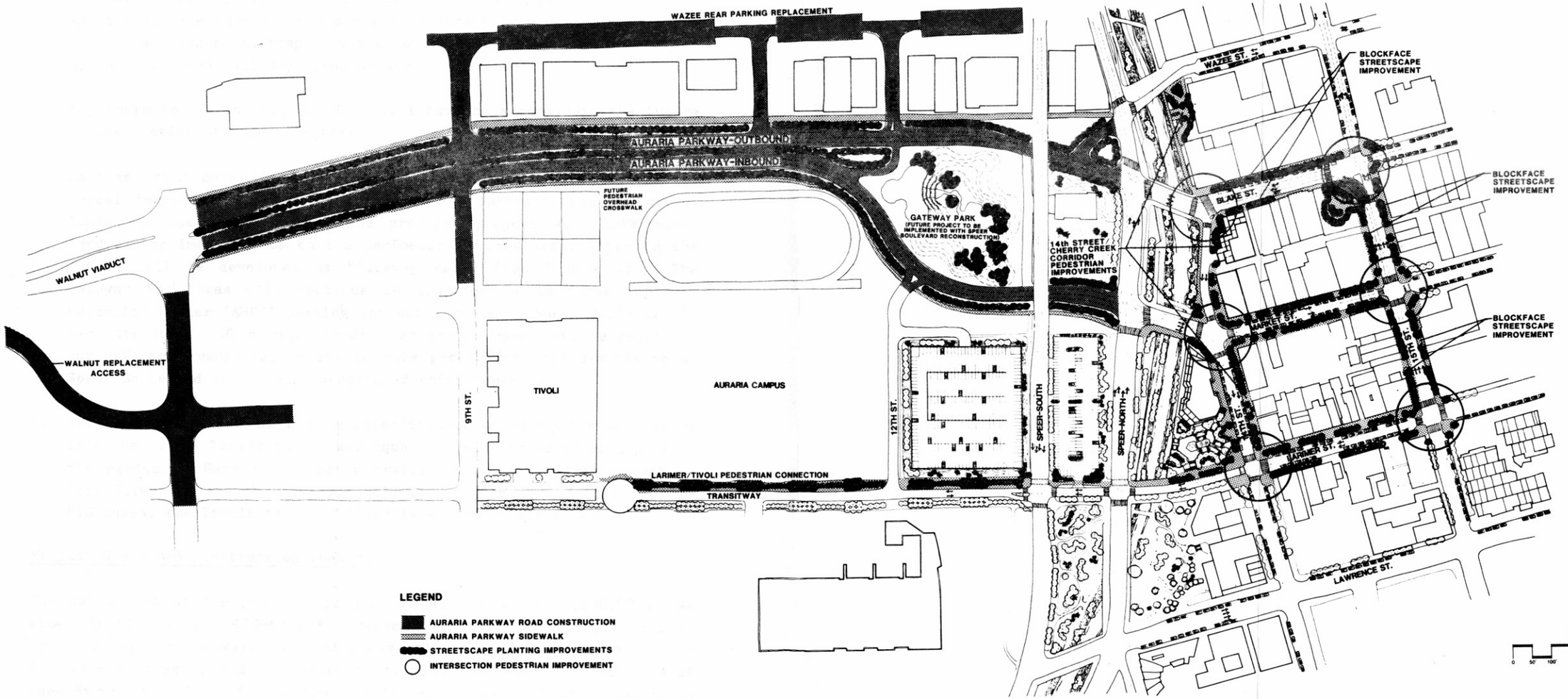
In addition to the major elements described above, the Auraria Parkway project will also include several open space, pedestrian, and streetscape components. The Parkway is envisioned not only as a roadway providing improved access to Downtown Denver, but also as an integral part of the overall improvement of the pedestrian and visual environment of the Downtown Denver Area.

The proposed project includes five related streetscape and urban open space areas (see Figure 5). These areas have been identified around the general zone where Auraria Parkway will enter the Downtown Area. These improvements will help to establish new pedestrian linkages and spaces, taking advantage of the circulation changes created by the Auraria Parkway.

1. Pedestrian improvements will be made at each of the six intersections on 14th and 15th Streets at Blake, Market, and Larimer in the Lower Downtown Area. Sidewalks will be widened where possible to discourage through traffic from using the 1400 blocks of Market and Larimer (inbound to Downtown), and the 1500 block of Blake (outbound to the Parkway). Pedestrian amenities such as trees, lighting, and benches will be added to the sidewalks.

   These intersection improvements will be part of additional streetscape improvements which are being planned throughout the Lower Downtown. Each of the signalized intersections will have an exclusive pedestrian phase, and all new curblines will include ramps at each corner.

2. Blockfaces around the two blocks shown in Figure 4 will also be enhanced with trees, special lighting, and benches to attract pedestrians. Like the proposed intersection improvements, the block face treatments will be integrated with future projects in the Lower Downtown. The first priority for streetscaping will be the two blocks that will experience the highest increase in traffic volumes when the Parkway opens: Blake Street between 14th and 15th, and 15th between Blake and Larimer.



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BRW INC. PLANNING TRANSPORTATION ENGINEERING ARCHITECTURE
4643 S. ULSTER STREET, SUITE 1160, DENVER, CO 80237

FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

Related Elements of the Recommended Parallel Mall Alternative

FIGURE 5

3. A portion of the project's estimated cost (as shown in Table 3 in Chapter 3) has been designated for the development of the 14th Street/Cherry Creek corridor from Wazee to Larimer. Improvements in this area will include one or more of the following proposals:
   1) streetscape improvements along 14th Street from Blake to Larimer,
   2) a new urban park along Cherry Creek, and/or
   3) a lower level walkway along or across the creek.

   Any improvements in this corridor will have to accommodate the future reconstruction of Speer at-grade.

4. Another urban open space improvement is planned for the triangular parcel formed by the diverging inbound and outbound Auraria Parkway lanes and Speer Boulevard. The proposed project will make minor landscaping improvements to the perimeter of this area, which in the future will be developed as "Gateway Park" (see Figure 5). The Gateway Park area will continue to function as an Auraria Higher Education Center (AHEC) parking lot until the time Speer Boulevard is reconstructed. When reconstructed at-grade, Speer will essentially cut off local vehicular access to this parcel (see the discussion of Speer Boulevard in the next section of this chapter).

5. Initial development of a pedestrian/transitway along Larimer Street from the Tivoli Denver to Larimer Square is also proposed as a part of the project. General vehicular traffic will be prohibited west of 12th Street, where the corridor will be used by a limited number of RTD buses, the Tivoli trolley, bicyclists, and pedestrians.

Project Costs and Construction Phasing

The total cost of the proposed project is an estimated $6,500,000. As shown in Figure 4, a 170-foot ROW between 7th and 12th Streets will be required for the Parkway. Approximately half of that land is now public ROW (Wazee Street), and the southern portion has been reserved by AHEC (see Figure 2). East of 12th Street additional campus ROW will have to be acquired for each alternative. Per the agreement that has been made between Denver and AHEC, the acquisition of AHEC land that is required for the Parkway will not add to the cost of the project since the ROW for various streets on campus will be vacated by Denver and transferred to AHEC in return (see Figure 2).

The construction of the westbound leg of the Walnut Viaduct is scheduled for completion during the early spring of 1987 and the eastbound leg by

the fall of 1987. The roadway portion of the Parkway from 7th to Speer should therefore be completed by the fall of 1987 to avoid having the inbound Walnut Viaduct traffic traversing the Auraria Campus on a temporary detour along 7th and Lawrence Streets.

The project will be constructed in two phases. Phase 1 will consist of the roadway surfaces, signalization, signing and lighting of the Parkway between 7th Street and Speer Boulevard; the rear parking area for the Wazee businesses west of Speer; radius improvements to the 15th and Blake intersection; and realignment of at-grade Walnut Street west of 7th Street. The total cost of this construction is an estimated $2.4 million. Phase 1 is scheduled for completion by the time that the westbound lanes of the Walnut Viaduct open in the fall of 1987.

The second phase will consist of landscaping improvements along the Parkway and around the edges of the future Gateway Park; pedestrian improvements at six intersections and along seven blocks downtown; and construction of the Larimer Street Transit/Pedestrianway. The estimated cost of this phase, which is to be completed in 1989, is $4.1 million.

Project Funding

The development of the funding structure for the Auraria Parkway was based on the premise that the Parkway project should be viewed as a single improvement. Participants in the Parkway's funding will therefore be responsible for contributions to the total project cost, rather than being responsible for specific individual portions of the project. Contributions to the Parkway's construction will be made in accordance with funding availability and the project expenditures will be made based on sound project phasing regardless of the source of funds. Although no need for any federal funding is currently anticipated, this EA has been prepared to preserve the project's eligibility for federal funding.

Participants in the cooperative planning and funding of the Auraria Parkway Project include the City and County of Denver, the Auraria Higher Education Commission (AHEC), and the Colorado Department of Highways (CDOH). The design and construction of the recommended alternative will be funded by the following approximate cost shares:

Auraria Higher Education Commission	39%
City and County of Denver	39%
Colorado Department of Highways	22%
Total	100%

CHAPTER 2:

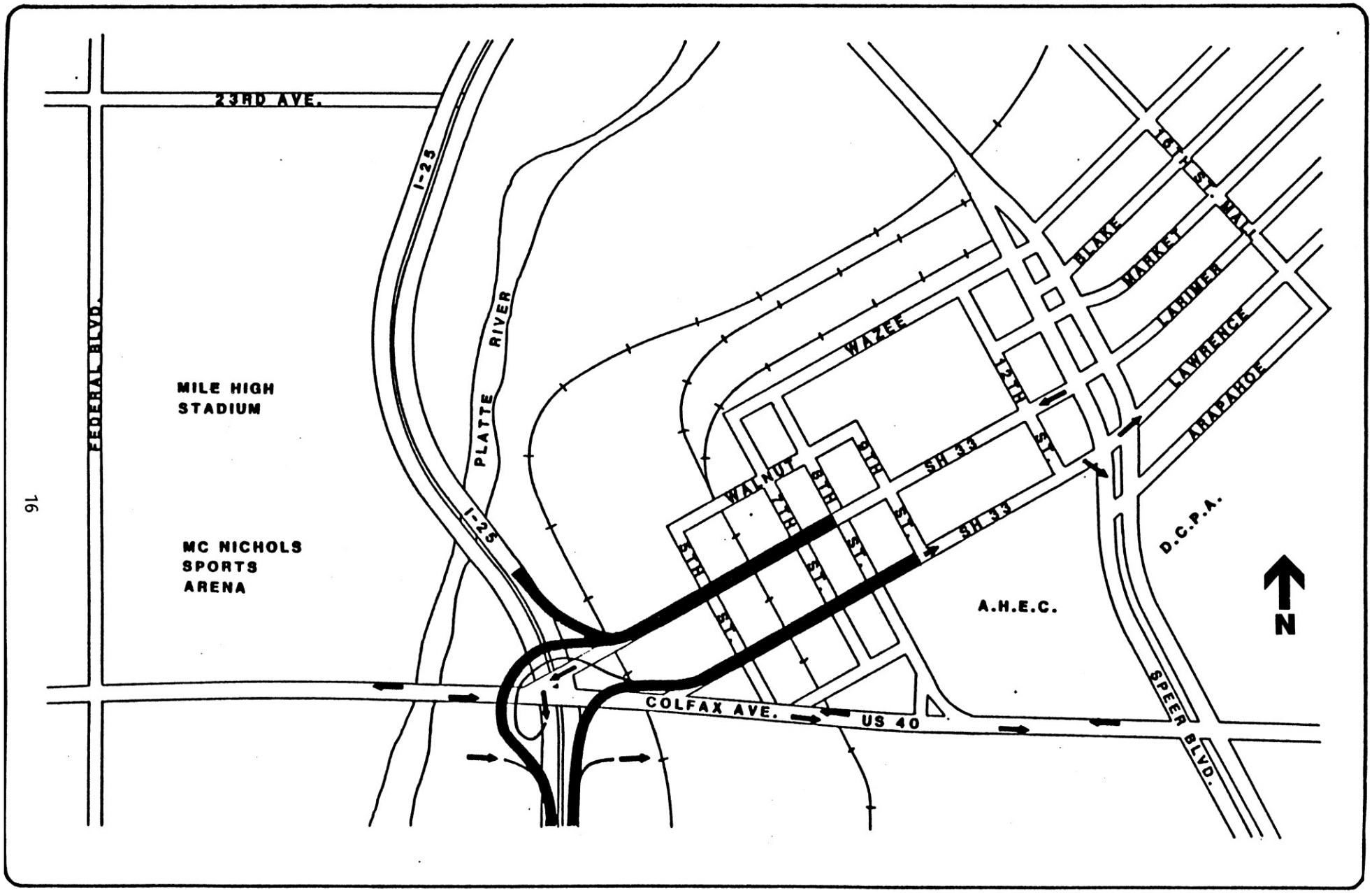
PROJECT NEED

The Colfax, Lawrence, and Larimer Viaducts provide critical auto, truck, and bus access to downtown Denver (see Figure 6). They are three of the nine grade separated routes that carry traffic to and from the Central Business District across railroad yards and the South Platte River to provide the necessary connections to I-25 and the metropolitan highway network.

Structural analyses of these viaducts, completed in 1978 and 1983, determined that they were structurally deficient and functionally obsolete. In February 1980 the "Colfax Viaduct Task Force" was organized to explore replacement options. Task Force membership initially included representatives from the City and County of Denver's Departments of Public Works, Traffic Engineering, and Planning; the Regional Transportation District (RTD), the Federal Highway Administration (FHWA), AHEC, and CDOH. In January 1983 the Task Force was expanded to include the Denver Partnership, an organization of downtown business interests.

Based upon the Task Force's findings and the recommendations of the subsequently approved Larimer and Lawrence Viaduct Replacement Environmental Assessments (January 1984 and March 1985), a three stage construction program for the replacement viaduct was established. Phase One consists of replacing the Colfax leg of the viaduct, and Phases Two and Three consist of the functional replacement of the Larimer and Lawrence legs. Construction started on Phase One in June of 1983 and was completed in August of 1984. The second and third phases are scheduled to be completed in the spring and fall of 1987, respectively.

The need for the Auraria Parkway was established by the decision to replace the deteriorating Lawrence and Larimer viaducts with a new viaduct along an alignment parallel to (and just north of) Walnut Street. The new Viaduct will touchdown just east of 7th Street between Walnut and Wazee Streets. This touchdown location is the result of an alternative analysis conducted by the Task Force. The selected touchdown point honors AHEC's long established goal to move traffic from roadways inside the Auraria Campus to the Campus perimeter.



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FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

EXISTING COLFAX, LAWRENCE AND LARIMER VIADUCTS

FIGURE 6

The proposed project will fulfill the need for a direct connection between the new Walnut Viaduct and Downtown Denver. The landscaping, open space, and streetscaping components of the project will provide an attractive entrance to Downtown, which is one of the City and County of Denver's urban design goals.

CHAPTER 3:

ALTERNATIVES CONSIDERED

Range of Alternatives

The touchdown location of the Walnut Viaduct that is now under construction and the reservation of ROW by AHEC along the northern edge of the Campus have essentially fixed the western half of the alignment of the Auraria Parkway between 7th and 11th Streets. East of 11th Street several alignment alternatives are available.

As discussed in the Traffic Section of Chapter IV, the analysis of existing and future travel patterns and traffic projections indicates the distribution shown in Figure 7. Three basic concepts for the connection of the Parkway to the Downtown street grid have been developed. These are:

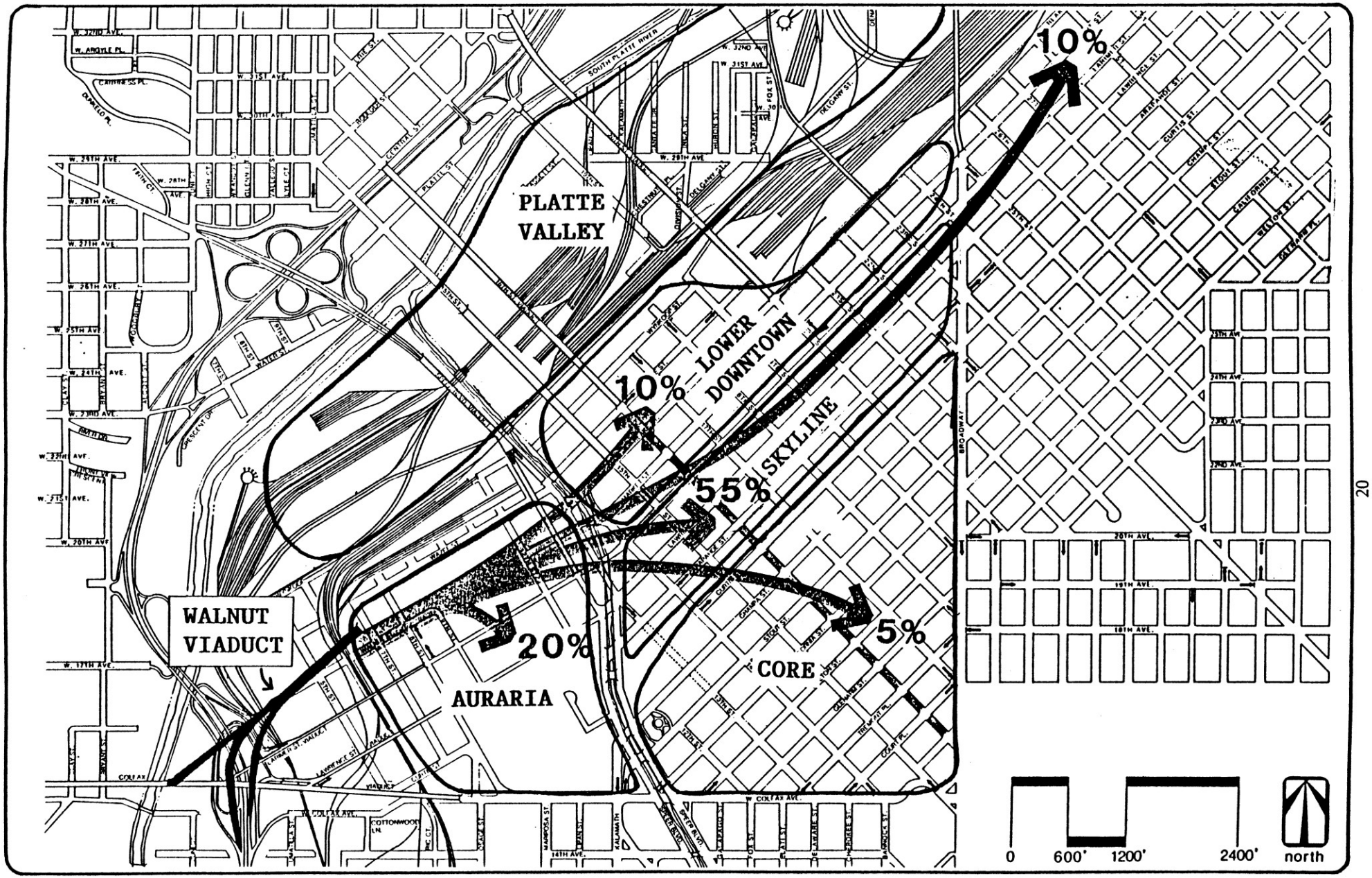
1) Connecting the Auraria Parkway to a single one-way, east-west pair of streets, preferably on a seam between subareas (the Single Cross Mall Concept);

2) Connecting to two one-way pairs, one directly serving the Lower Downtown and one serving the Skyline Area (the Multiple Cross Mall Concept); and

3) Connecting to a one-way, east-west pair and a north-south, one-way pair such as 14th/15th or Speer Boulevard (the Parallel Mall Concept).

A total of 23 conceptual alternatives were generated from these three basic concepts (see Table 1). This wide range of alternatives was developed in order to study how connecting the Parkway to various combinations of streets in the Downtown grid would affect travel patterns, subarea access, and Downtown and subarea plans.

The Single Cross Mall Alternatives were developed as simple, straightforward methods of connecting the Auraria Parkway to the Downtown grid. Each option focuses traffic on a single one-way pair from Wewatta Street (which is one block north of Wynkoop Street and runs behind Union Station) to Arapahoe Street. Alternatives 1-A through 1-D focus traffic in the



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BRW

FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

FUTURE INBOUND PARKWAY TRIP DISTRIBUTION

FIGURE 7

TABLE 1
PRELIMINARY PARKWAY ALTERNATIVE CONCEPTS

Concept	Alternative
Single Cross Mall Corridor	1-A. Market/Lawrence
	1-B. Blake/Market
	1-C. Wazee/Blake
	1-D. Wazee/Market
	1-E. Larimer/Lawrence
	1-F. Market/Larimer
	1-G. Lawrence/Arapahoe
	1-H. Wewatta
Multiple Cross Mall Corridor	2-A. Lawrence/Arapahoe with Blake/Market
	2-B. Lawrence/Arapahoe with Wazee/Blake
	2-C. Market/Larimer with Wazee/Blake
	2-D. Market/Lawrence with Wazee/Blake
	2-E. Larimer/Lawrence with Blake/Market
	2-F. Larimer/Lawrence with Wazee/Blake
	2-G. Lawrence/Arapahoe with Market/Larimer
	2-H. Lawrence/Arapahoe with Wazee/Market
	2-I. Larimer/Lawrence with Wazee/Market
Parallel Mall Corridor	3-A. 14th/15th with Blake/Market
	3-B. 14th/15th with Wazee/Blake
	3-C. 13th/14th with Wazee/Blake
	3-D. 13th/14th with Blake/Market
	3-E. Speer with Wazee/Blake
	3-F. Speer with Blake/Market

Lower Downtown Area (along Market, Blake, Wazee, and Wynkoop Streets), while Alternatives 1-E through 1-G focus traffic into the Skyline Area (along Arapahoe, Lawrence, and Larimer Streets). Alternative 1-H, the Wewatta Alternative, is the only Single Cross Mall Alternative that would require the construction of a new roadway, which would be from 7th to 20th Street along the existing mainline tracks behind Union Station.

The Multiple Cross Mall Alternatives focus Parkway traffic on two sets of one-way east-west pairs, one to provide direct access to the Skyline Area and the second to serve the Lower Downtown Area. The intent of this alternative concept was to distribute Parkway traffic along multiple routes toward their ultimate destinations.

The Parallel Mall Corridor Alternatives focus traffic on two one-way pairs. One pair of east-west streets for each alternative was selected to serve the Lower Downtown Area. The second pair north-south streets was selected to distribute traffic to the various streets in the Skyline Area and other Downtown areas to the south.

Evaluation of Preliminary Alternatives

The following evaluation criteria were applied to each of the preliminary alternatives listed in Table 1 in order to narrow that list to those alternatives worthy of more detailed analysis. These criteria were developed from the traffic diversion requirements discussed on Pages 31 and 36, and from the major issues identified by the numerous interest groups during the public participation process described in Chapter 5. The evaluation criteria are briefly described below:

1. Maximize Traffic Diversion Potential for Core Area Traffic - An alternative meeting this criterion would encourage the use of Colfax Avenue to the CBD Core and would not provide a direct link to the CBD Core via the Auraria Parkway.

2. Maximize Directness of Travel for Remaining Walnut Viaduct Traffic - An alternative meeting this criterion would directly serve the Skyline Area to which 55% of future traffic is destined and the Lower Downtown Area to which approximately 10% of the future trips are destined.

3. Utilize Existing Roadway Capacity Within the Downtown Grid - An alternative meeting this criterion would match projected traffic volumes to existing grid roadway capacities and discourage the focusing of traffic on one corridor within the Downtown street grid.

4. Minimize Disruption of Existing Access Patterns - An alternative meeting this criterion would not change traffic directions or connections on major corridors such as Arapahoe, Lawrence, Larimer, 14th and 15th Streets.

5. Preserve Urban Design Opportunities in the Lower Downtown District - An alternative meeting this criterion would provide for traffic volumes which are consistent with other urban mixed residential, office and commercial use areas which have significant amounts of pedestrian activity.

6. Enhance Cherry Creek Open Space - An alternative meeting this criterion would provide opportunities for the development of open space and pedestrian activity in the Cherry Creek area by permitting both the north and southbound lanes of Speer Boulevard to be relocated west of the creek, there by reducing the traffic that is adjacent to the creek, and by accommodating pedestrian access to and across the creek.

7. Permit Pedestrian Connections of Auraria and the Lawrence/Larimer Retail Spine - An alternative meeting this criterion would enhance the pedestrian connections between Larimer Square, Writer Square, and the Tabor Center. Such an alternative would also encourage and/or permit pedestrian and other connections between Downtown and the Auraria Campus, Tivoli Denver, and Auraria Village (located northwest of the Campus).

8. Minimize Right-Of-Way Requirements - An alternative meeting this criterion would require minimum land takings, particularly in the Cherry Creek area and the Auraria Campus; and would not require land takings in the Lower Downtown Area or the Platte Valley.

9. Maintain Flexibility for Implementing Other Plans and Concepts - An alternative meeting this criterion would support Denver's Downtown Access Plan, the Auraria Campus Plan, and the Platte Valley Plan.

10. Maximize Staging Opportunities - An alternative meeting this criterion would utilize existing roadways and have minimal need for other major roadway improvements in the near term. This would permit the timely and effective implementation of the proposed Parkway.

Alternatives Selected For Further Study

Three alternatives were retained for more detailed evaluation. One alternative was selected from each major alternative concept type:

- The Single Cross Mall Alternative (1-C) using Wazee and Blake Streets;
- The Multiple Cross Mall Alternative (2-E) using the Larimer/Lawrence and Blake/Market one-way pairs; and
- The Parallel Mall Alternative (3-A) using the one-way pairs of Blake and Market and 14th and 15th Streets.

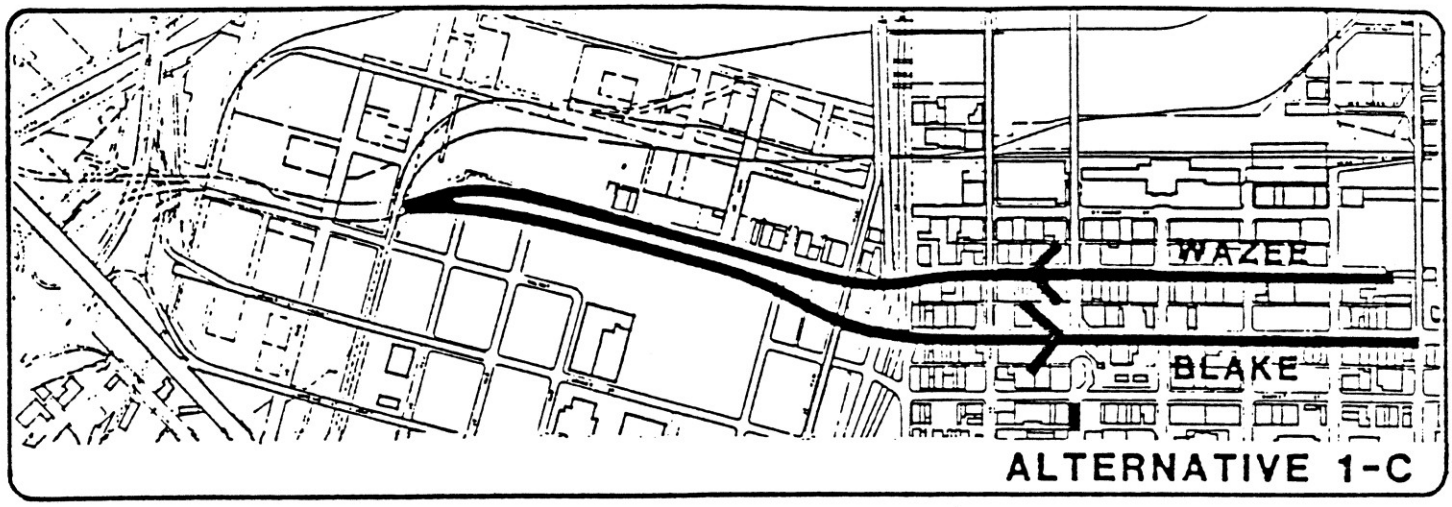
These alternatives are shown in Figure 8.

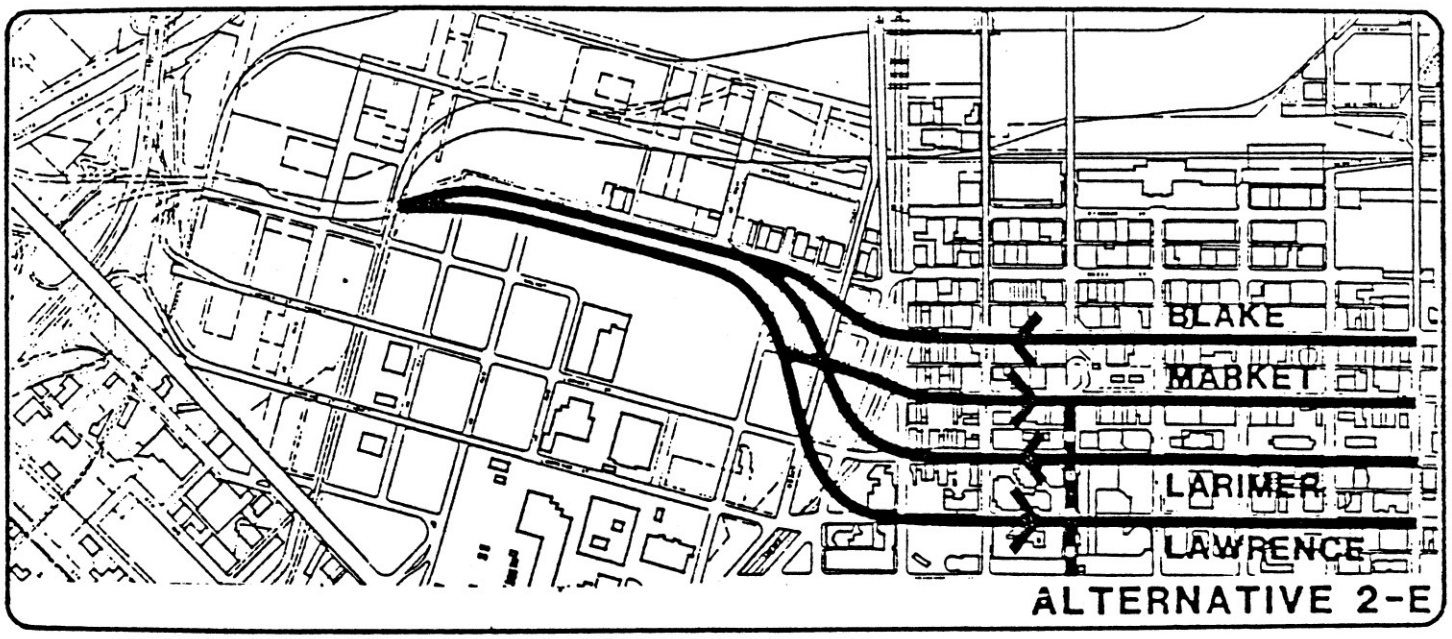
The Wazee/Blake Single Cross Mall Alternative (1-C) was initially retained for more detailed evaluation because it provided the most direct link to the Downtown Street grid and involved the least cost. Although it was determined that none of the Single Cross Mall Alternatives adequately met the evaluation criteria, this alternative represented the minimum cost build alternative.

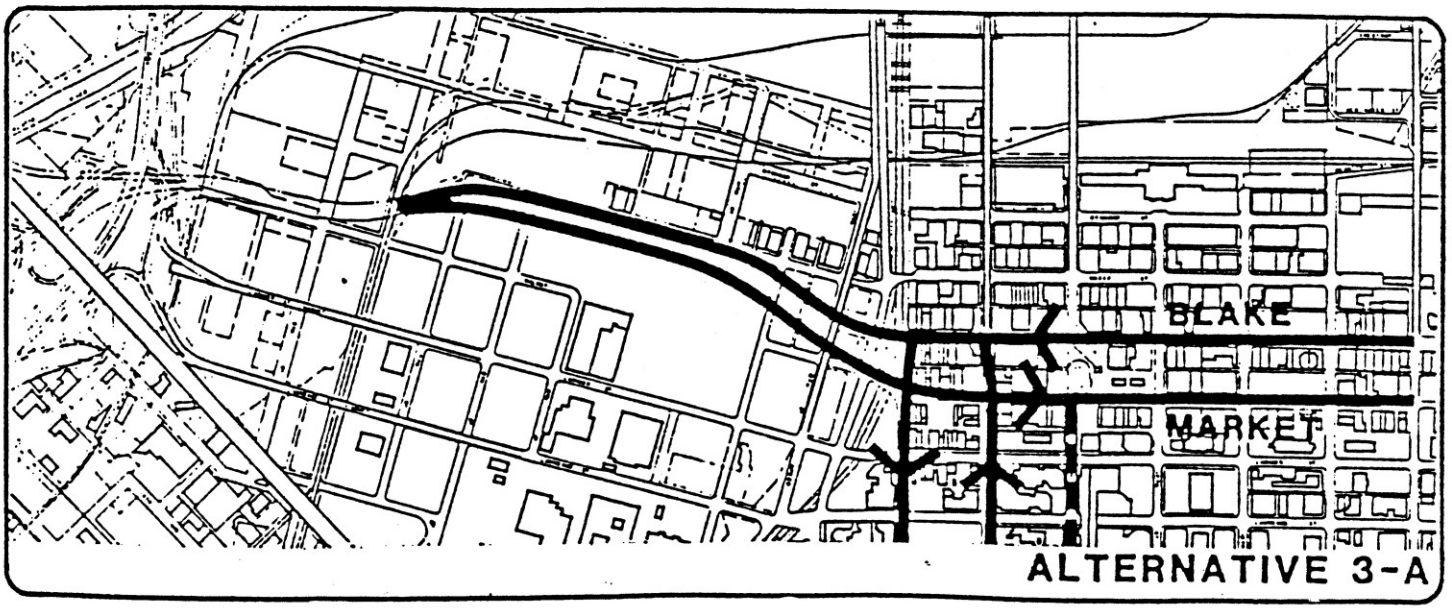
The Larimer/Lawrence with Blake/Market Multiple Cross Mall Alternative (2-E) was retained because it continues to provide access from I-25 in the current one-way/configuration on Lawrence Street. Furthermore, this alternative is the working concept that was discussed in the Lawrence and Larimer Viaduct Replacement Environmental Assessments.

The 14th/15th with Blake/Market Parallel Mall Alternative (3-A) was selected because it was the most consistent with the evaluation criteria of all the alternatives evaluated. This alternative provides relatively direct travel paths to the Lower Downtown Area via Market and Blake Streets and to the Skyline Area via 14th and 15th Streets. Furthermore, it utilizes existing roadway capacity and causes little disruption to existing access patterns.

Evaluation of these three alternatives was divided into two phases. The first level of evaluation included transportation, urban design, and land use studies, which were used to refine the Parkway alternatives. The findings of these studies resulted in the retention of both the Parallel Mall and Multiple Cross Mall Alternatives, elimination of the Single Cross Mall Alternative, and the development of a hybrid alternative.







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ALTERNATIVES INITIALLY CONSIDERED

FIGURE 8

Although it had the least cost, the Single Cross Mall Alternative was eliminated from further consideration because traffic destined for the Skyline Area and other Downtown locations would have to use Speer Boulevard, a congested facility, or cut through the Lower Downtown Area. This alternative would also require the reversal of existing traffic flows on Blake and Wazee, which would necessitate the potential reversal of the one-way street grid in the Downtown Area. Finally, it resulted in significant traffic volumes on Wazee and Blake Streets, which were determined not to be in conformance with the pedestrian environment envisioned for the Lower Downtown Area.

Prior to the final phase of alternative evaluation, a hybrid alternative was developed in order to combine the major features of both the Multiple Cross Mall and Parallel Mall Alternatives. The primary benefit provided by the Combined Alternative is the more even distribution of the outbound Auraria Parkway traffic between Larimer and Blake Street.

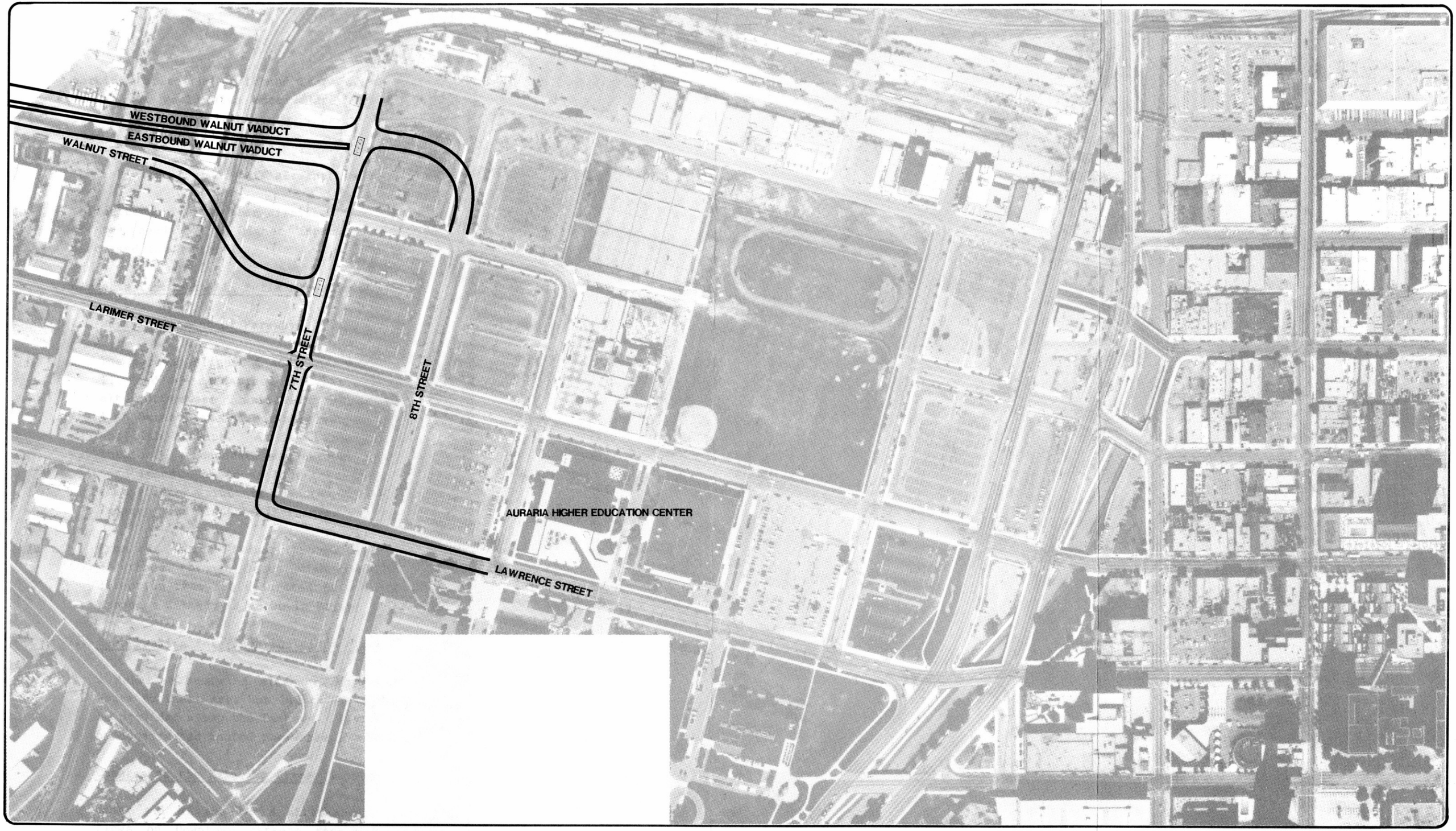
As discussed in Chapter 5 and shown in the project's chronology (Appendix B), the decision to select the three alternatives described below for final consideration was made by the City and County of Denver during an extended public participation process.

Description of Alternatives

"No-Build"

The "No-Build" Alternative is the minor amount of construction that would be required to connect the east end of the new Walnut Viaduct to the existing streets which pass through the Auraria Campus. As shown in Figure 9, eastbound traffic departing the viaduct would turn right at the signalized intersection at 7th Street. Traffic destined for Downtown would continue south two blocks and then make triple left turns at Lawrence. Trips to the industrial area under the new viaduct would (as with all of the build alternatives) turn right from 7th Street onto a new mid-block street that curves north to connect to existing Walnut Street at a point west of 6th Street.

Outbound traffic from Downtown would travel on Speer Boulevard or the existing grid network to westbound Larimer, turn right on 8th Street and continue one block, and then follow a new route through an existing



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BRW INC. PLANNING TRANSPORTATION ENGINEERING ARCHITECTURE
4643 S. ULSTER STREET, SUITE 1180, DENVER, CO. 80237
FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

0 175' 350' 700' north

"NO-BUILD" ALTERNATIVE

FIGURE 9

parking lot to the westbound lanes of the Walnut Viaduct. The signal on 7th Street would also accommodate outbound viaduct traffic from Wazee Street. However, access from Wazee to the westbound viaduct via 8th Street would not be permitted.

The estimated cost of this alternative is $530,000.

This alternative has been dismissed from any further consideration because of the need for a higher capacity and less disruptive facility as discussed in Chapter 2.

Elements Common to All Build Alternatives

1. Western Segment of Parkway

The parkway alignment and cross-sections (as shown in Figures 2, 10, 11, and 4) illustrate the fact that the detailed plans for each alternative are identical from the Walnut Viaduct to approximately 11th Street, except for some variation in intersection design at 11th and 12th Streets. At its touchdown point the Walnut Viaduct will initially accommodate six through lanes and eastbound left and right turn lanes. A second left turn lane can be accommodated within the same viaduct structure when the Denver Rio Grande 7th Street Rail Yard Property and Platte Valley areas are developed.

From the Walnut Viaduct through 11th Street the Parkway will consist of three through lanes with right and left turn lanes in each direction that are separated by a median. The cross-section of the proposed Parkway is shown in Figure 4 on page 7.

2. Rear Parking for Wazee Buildings Along Parkway

A detailed study of alternative parking and access schemes for the Wazee Business Area has led to the determination that no parking will be provided along the Parkway. Instead a landscaped parking area will be constructed behind the Wazee Businesses.

3. Changes to the Existing Street Network

Under all of the build alternatives the directions of the traffic flows on Downtown streets remain generally unchanged. The only

exceptions are 15th Street between Market and Blake, and the 15th Street Viaduct, both of which will be converted from two-way to northbound only. Eventually this viaduct will be shortened (as a separate action not associated with this EA) to touch down one block sooner at Wazee Street, so that it can be reopened to southbound traffic. When that occurs, however, vehicles departing the viaduct will have to turn left on Wazee because there will be insufficient cycle time at 15th/Blake to accommodate southbound vehicles entering that intersection from the north.

Another common element of the three build alternatives is the closure and future ROW vacation of several streets within the Auraria Campus (as shown Figures 2, 10, or 11).

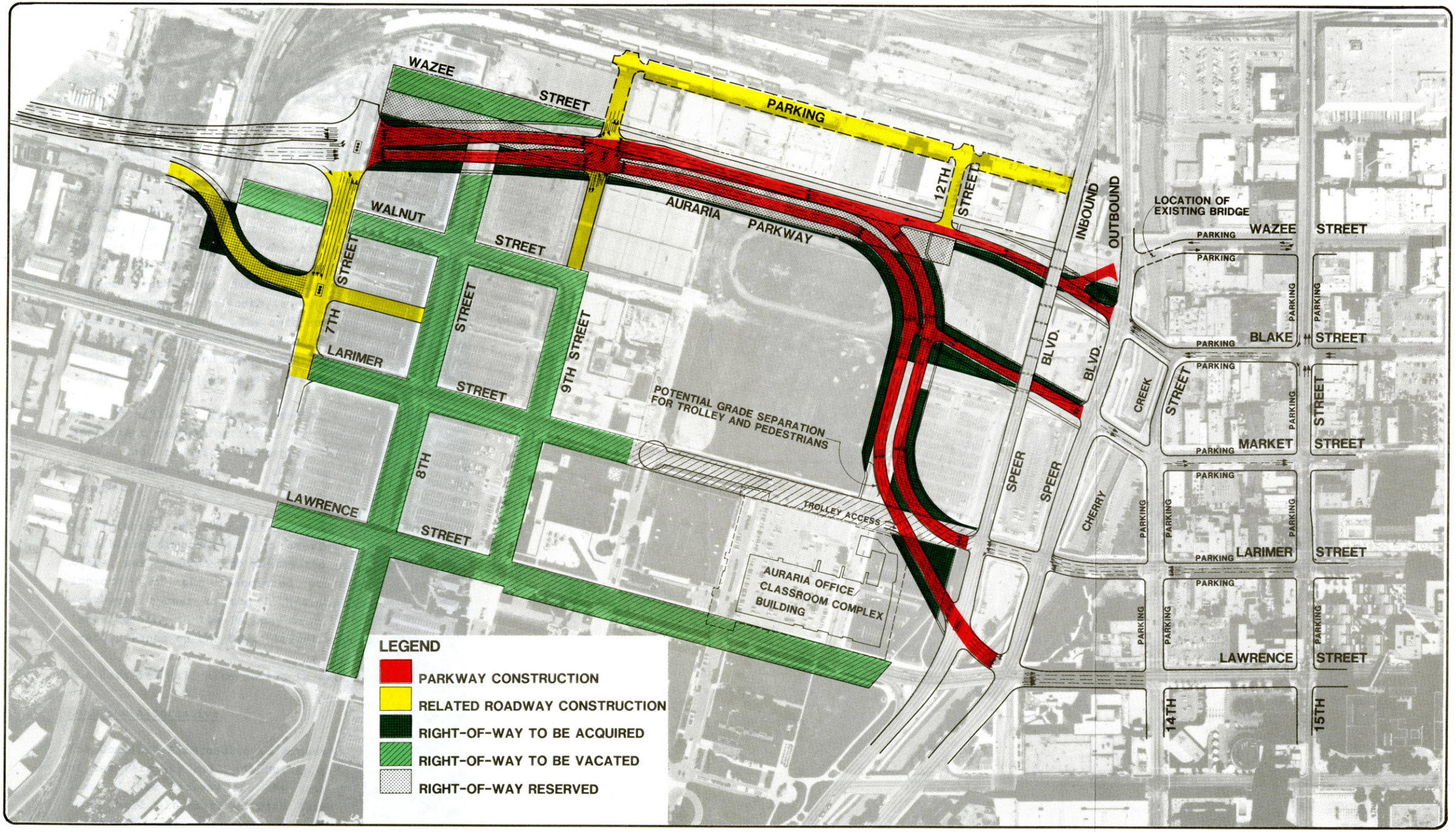
A description of the remaining elements that are peculiar to each build alternative follows.

Multiple Cross Mall Alternative

As indicated in Figure 10, the alignment for the Multiple Cross Mall Alternative departs significantly from the Parallel Mall Alternative east of 11th Street, at which point the primary inbound leg of the Parkway curves through the Auraria Campus to connect with Lawrence Street. A new bridge over Cherry Creek would have to be built to carry the inbound traffic along an alignment which avoids AHEC's new science classroom building. Inbound access from the Parkway to Market Street would be provided via a left turn onto a new connection under the existing Speer Viaduct.

Outbound traffic from three through lanes on westbound Larimer would follow a new route onto the Campus that is adjacent to the inbound lanes (along existing 12th Street for 500 feet). Secondary outbound access to the Parkway would be provided by a new connection from Blake (two lanes westbound) and Wazee (one lane). Right-in and right-out turns would be allowed at 12th Street (north of existing Wazee) to access this connecting street.

The primary benefit of the Multiple Cross Mall Alternative is that it would focus traffic destined for most of the CBD on Lawrence Street while still providing access into Lower Downtown via Blake and Market Streets.



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4643 S. ULSTER STREET, SUITE 1160, DENVER, CO 80237

FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

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north

MULTIPLE CROSS MALL ALTERNATIVE

FIGURE 10

Laneage requirements and parking changes along the streets in the Downtown grid are shown in Table 8 in Chapter 4. The estimated cost of this alternative is $8.7 million.

Parallel Mall Alternative (recommended for construction)

As described in detail in Chapter 1 and illustrated in Figure 2 on page 3, from a point just east of 11th Street, the in and outbound legs of this alternative curve slightly to the southeast to connect with the existing bridges across Cherry Creek at Blake and Market Streets respectively. Within the Downtown street grid the inbound movement will utilize 14th Street south from Market Street to serve the Skyline and downtown destinations to the south, and Market Street east to separately serve the Lower Downtown Area. The outbound route from the CBD areas to the Parkway will follow 15th Street north and Blake Street west, joining together at 15th and Blake, and continuing west on Blake to the existing Blake Street bridge across Cherry Creek and to the Parkway beyond.

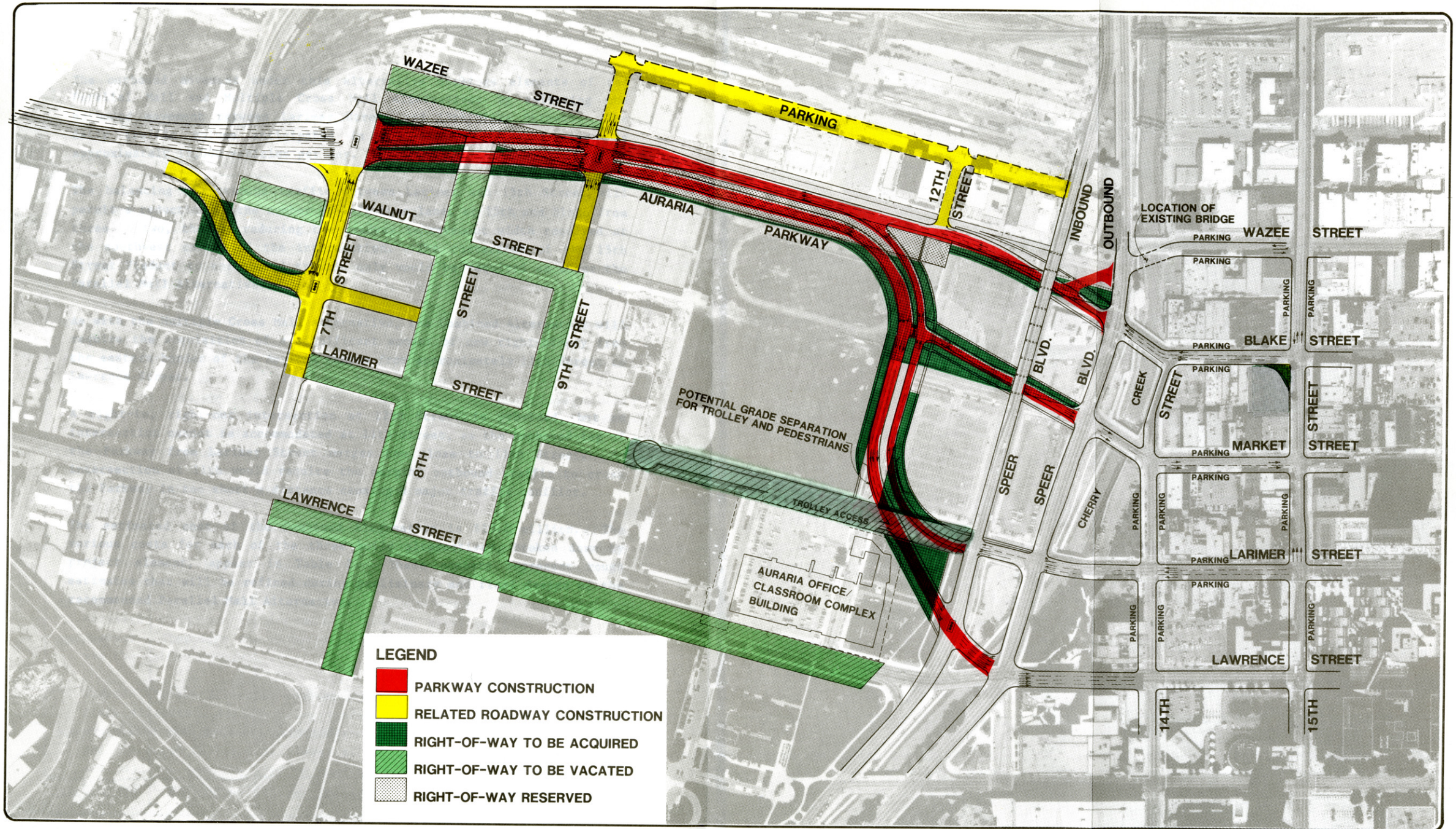
The 15th/Blake Street intersection will be enlarged to provide a sufficient radius for triple left turn lanes for outbound traffic from the CBD. That capacity improvement will require either the closure of the 15th Street Viaduct or changing its two-way movement to northbound (outbound) only.

A variation of this alternative, consisting of the redesign of the 15th/Blake intersection to provide only a double left from 15th onto Blake, was evaluated to assess the potential reduction of the right-of-way impacts (and the associated project costs) on the property on the southwest corner of the 15th/Blake intersection. The reduction to two lanes leading to the Parkway from 15th Street would require three through traffic lanes on the Blake Street approach to the intersection.

The Parallel Mall Alternative is estimated to cost $6.5 million.

Combined Alternative

The Combined Alternative is presented in Figure 11, and combines elements of the Parallel Mall and Multiple Cross Mall Alternatives. The inbound legs of the Parkway are the same as those proposed under the Multiple Cross Mall Alternative, with three through inbound lanes connecting to Lawrence Street.



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BRW, INC. 4643 S. ULSTER STREET, SUITE 1080, DENVER, CO. 80237

FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

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COMBINED ALTERNATIVE

FIGURE 11

The outbound movement under this alternative combines elements of the Parallel Mall and Multiple Cross Mall Alternatives by splitting the outbound movement between Larimer Street and 15th/Blake Streets. The daily traffic volume anticipated in the future on each street is approximately 15,000 vehicles per day.

The balancing of outbound traffic between Larimer and 15th Street will permit a reduction in the number of left turn lanes at 15th and Blake from three to two, thereby reducing the roadway improvement width required at the southwest corner of the intersection. The conversion of the 15th Street Viaduct to northbound traffic only would be required as under the Parallel Mall Alternative.

As with the Multiple Cross Mall Alternative, the Combined Alternative will require the acquisition of a significant amount of new right-of-way from the eastern border of the Auraria Campus from approximately 11th Street to Lawrence Street.

A right-in, right-out intersection at 12th Street is provided, but an intersection cannot be accommodated at 11th Street, as the outbound leg of the Parkway from Larimer Street merges too close to 11th Street. An intersection at 11th would require the merging outbound traffic to cross the Parkway in too short a distance causing a major traffic conflict.

The estimated cost of the Combined Alternative is $10.1 million. The various costs for each of the three build alternatives, broken down by project element, appear in Table 2. These numbers represent rough estimates that will be refined during preliminary and final design of the recommended Parallel Mall Alternative.

TABLE 2

PROJECT COSTS BY ALTERNATIVE

PROJECT ELEMENT	PARALLEL MALL	MULTIPLE CROSS MALL	COMBINED
Auraria Parkway (7th St. to Northbound Speer)	$3,000,000	$5,300,000	$ 5,300,000
Wazee Rear Parking Area	300,000	300,000	300,000
15th and Blake/Intersection and	510,000	N/A	510,000
Walnut Street Realignment West of 7th St.	520,000	520,000	520,000
Cherry Creek - 14th St. Corridor (Pedestrian Improvements)	500,000	760,000	760,000
Pedestrian Improvements At Six Intersections (formed by Larimer, Market, Blake, 14th, 15th)	600,000	200,000	600,000
Gateway Park	120,000	120,000	120,000
Pedestrian Improvements Along block Faces (Larimer, Market, Blake from 14th to 15th)	500,000	500,000	500,000
Larimer Street Transit/ Pedestrianway (10th to 14th)	450,000	1,500,000	1,500,000
TOTAL PROJECT COST	**$6,500,000**	**$9,200,000**	**$10,110,000**

CHAPTER 4:

IMPACTS AND MITIGATION MEASURES

Traffic Operations Impacts

Parkway Travel Demand

As shown in Figure 12, it was initially forecasted that by the Year 2005 61,000 vehicles per day would cross the Walnut Viaduct, and 51,000 of those would use the proposed Parkway. Those future traffic projections were based upon anticipated population and employment growth in the travel shed area of the viaduct, and were approved by the Denver Regional Council of Governments (DRCOG's concurrence appears in CDOH's December 4, 1984 letter in Appendix A).

Subsequent analysis of existing travel patterns indicates that approximately 40% of the traffic exiting the Lawrence Viaduct is destined for the "Core" CBD area that is south of Arapahoe Street. Designing the new Parkway to accommodate the future demand for these trips would be contrary to the objective of the City and County of Denver to provide direct connections to areas rather than funneling traffic through one Downtown area to access another. For this reason, three other corridors were analyzed to determine their potential to accommodate trips that need to be diverted from the Parkway.

The three corridors that were considered are shown in Figure 13.

The results of both the One-way Street Study[1] and the Santa Fe Drive Transportation Systems Management Framework Plan[2] show there is very little excess capacity in either the Lincoln/Broadway or the Santa Fe/ Kalamath corridors to accommodate traffic diverted from the Walnut Viaduct. Therefore the majority of the diverted traffic will have to use the Colfax corridor.

Three different diversion scenarios were developed which highlight the range of options for diverting traffic to Colfax. The daily volumes associated with each scenario are shown in Figure 14, while the impacts are discussed in Table 3. Level of Services (LOS) definitions, which are used to describe traffic conditions that vary from free flow to gridlock congestion, appear in Table 4.

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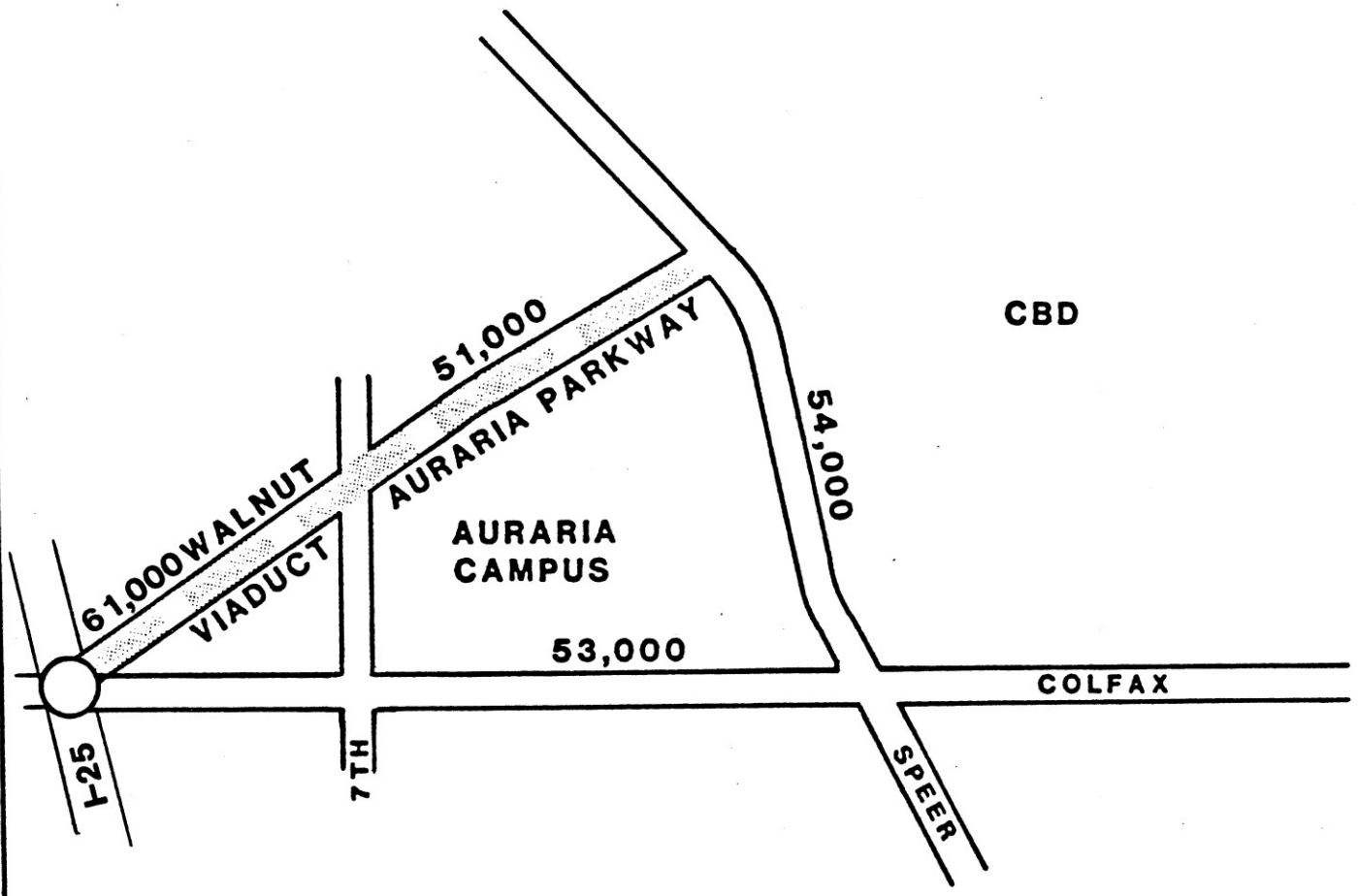
[1]This study was conducted by the City and County of Denver, 1985.

[2]This study was prepared for U.C.D.'s Center for Urban Transportation Studies and the Center for Community Development and Design, 1984.



SOURCE: LAWRENCE ST. VIADUCT REPLACEMENT ENVIRONMENTAL ASSESSMENT, 1985

N

EXISTING INTERCHANGE

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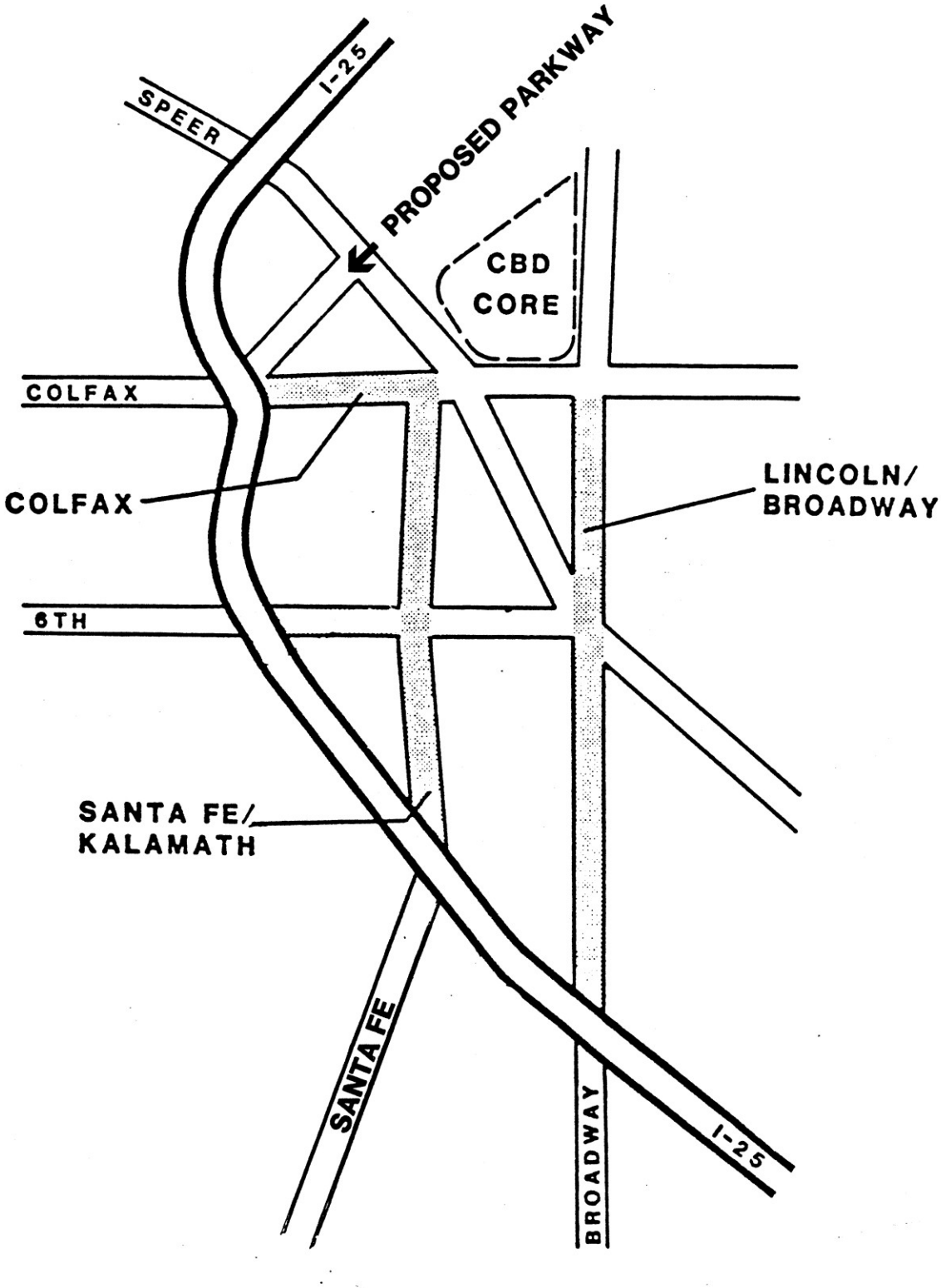
INITIAL VIADUCT REPLACEMENT TRAFFIC PROJECTIONS
(VEHICLES PER DAY - YEAR 2005)

FIGURE 12



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MADISON, MADISON, INTERNATIONAL
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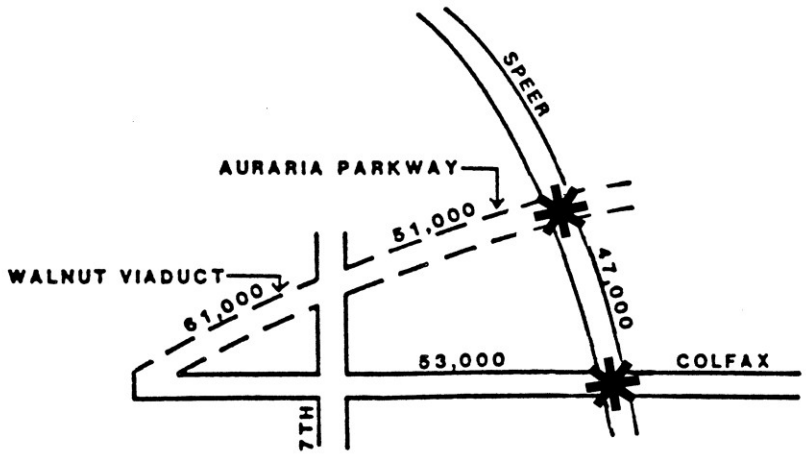
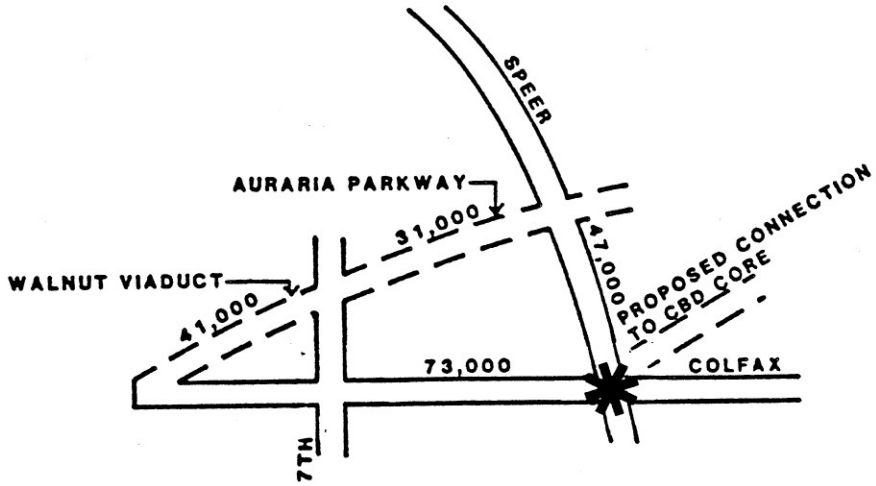
POTENTIAL CORRIDORS FOR DIVERSION

FIGURE 13

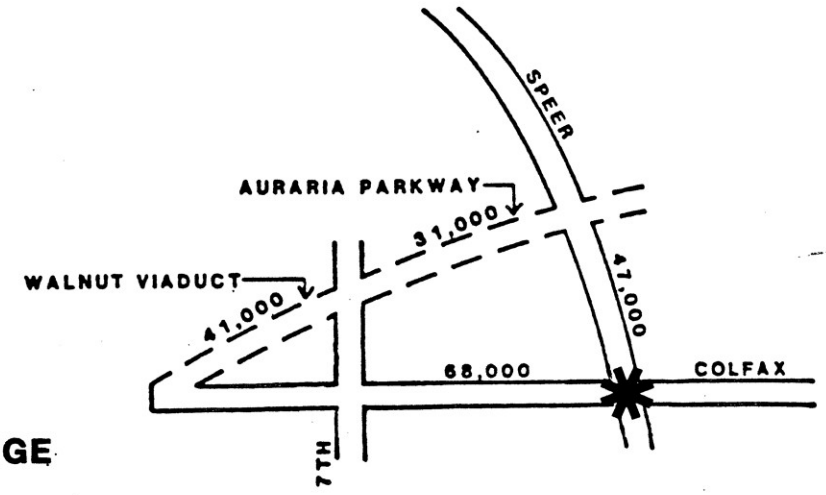
NO DIVERSION



MAXIMUM DIVERSION TO COLFAX



MAJOR DIVERSION TO COLFAX W/ MINOR DIVERSION TO LINCOLN/ BROADWAY AND SANTA FE/ KALAMATH



✱ **FUTURE INTERCHANGE REQUIRED**

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MADISON, MADISON, INTERNATIONAL
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HAMMER-SILER-GEORGE ASSOCIATES
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TRAFFIC DIVERSION ANALYSIS
(VEHICLES PER DAY - YEAR 2005)

FIGURE 14

TABLE 3
DIVERSION-RELATED IMPACTS

DIVERSION SCENARIO	SYSTEM RELATED IMPACTS
No Diversion	°Interchange or grade separation required at intersection of Auraria and Speer °Interchange or grade separation required at intersection of Colfax and Speer
Maximum Diversion to Colfax	°The at-grade intersection of Auraria Parkway and Speer would operate at Level of Service D (see Table 5) °Interchange or grade separation required at Colfax and Speer intersection °Major connection required from Colfax to CBD Core °The at-grade intersection of Colfax and 7th would operate at capacity (LOS E) °Interchange of I-25 and Colfax would require increased off-ramp and on-ramp capacities
Major Diversion to Colfax With Minor Diversion to Lincoln/Broadway and Santa Fe/Kalamath	°The at-grade intersection of Auraria Parkway and Speer would operate at LOS D °Interchange or grade separation required at Colfax and Speer intersection °Major connection required from Colfax to CBD Core °The at-grade intersection of Colfax and 7th would operate near capacity (LOS D/E) °Approximately 5,000 vehicles per day could be diverted to the Lincoln/Broadway and Santa Fe/Kalamath Corridors °Interchange of I-25 and Colfax would require increased off-ramp and on-ramp capacities

TABLE 4

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE	SERVICE LEVEL DEFINITION FOR INTERSECTIONS
"A"	Excellent operation; approaches appear quite often, no vehicle waits longer than one red indication, and nearly all drivers find freedom of operation; average speeds on adjacent street segments greater than 25 mph.
"B"	Very good operation; represents stable operation; an occasional queue on an intersection approach may develop; average speeds on street segments about 25 mph.
"C"	Good operation; occasionally vehicles may have to wait through more than one red signal indication, and backups may develop behind turning vehicles; speeds on adjacent street segments greater than 20 mph.
"D"	Fair operation; vehicles may be require to wait through more than one red signal indication during short peaks within peak periods; no long-standing queues at intersections; speeds on adjacent street segments greater than 15 mph.
"E"	Poor operation; some long-standing queues on critical approach to signalized intersections; delays may be great, up to several signal cycles; speeds on adjacent street segments about 15 mph.
"F"	Very severe congestion; complete breakdown in which queue from overloaded intersection interferes with operations at other intersections upstream; speeds on adjacent street segments about 0 - 5 mph.

Analysis of these scenarios indicates that a maximum of 20,000 vehicles per day destined for the CBD Core could be diverted. This maximum diversion, however, is based upon:

1) The construction of a grade separation (or interchange) at the Speer Boulevard and Colfax Avenue intersection;

2) The provision of double right turn lanes at the end of the I-25 northbound off-ramp to eastbound Colfax.

3) The provision of an improved connection to the CBD Core Area from Colfax Avenue; and

4) The ability of the Lincoln/Broadway and Santa Fe/Kalamath one-way pairs to accommodate an additional 5,000 vehicles per day.

The revised traffic distribution is shown in Figure 7 on page 16.

The City and County of Denver has budgeted funding for a detailed analysis of the feasibility of and costs associated with making improvements to the Colfax Corridor and evaluating the traffic diversion potential of other access points to the CBD Core. Assuming that half of the 20,000 daily trips in this year 2005 will be accommodated by interim improvements to Colfax, an estimated 41,000 vehicles per day will use the Parkway.

Without these Colfax improvements, connections to and from Lawrence and Larimer Streets and the Parkway will become necessary to provide a second one-way couplet (as provided in the Combined Alternative) to meet future travel demands between the CBD and I-25. Four through lanes will be needed in each direction on the Parkway to match the capacity of the two pairs of one-way couplets. Therefore, until the capacity improvements to Colfax are determined to be feasible, the City and County of Denver will reserve the necessary right-of-way within the Auraria Campus to accommodate possible future Larimer/Lawrence connections to the Parkway.

Existing and Future Traffic Volumes

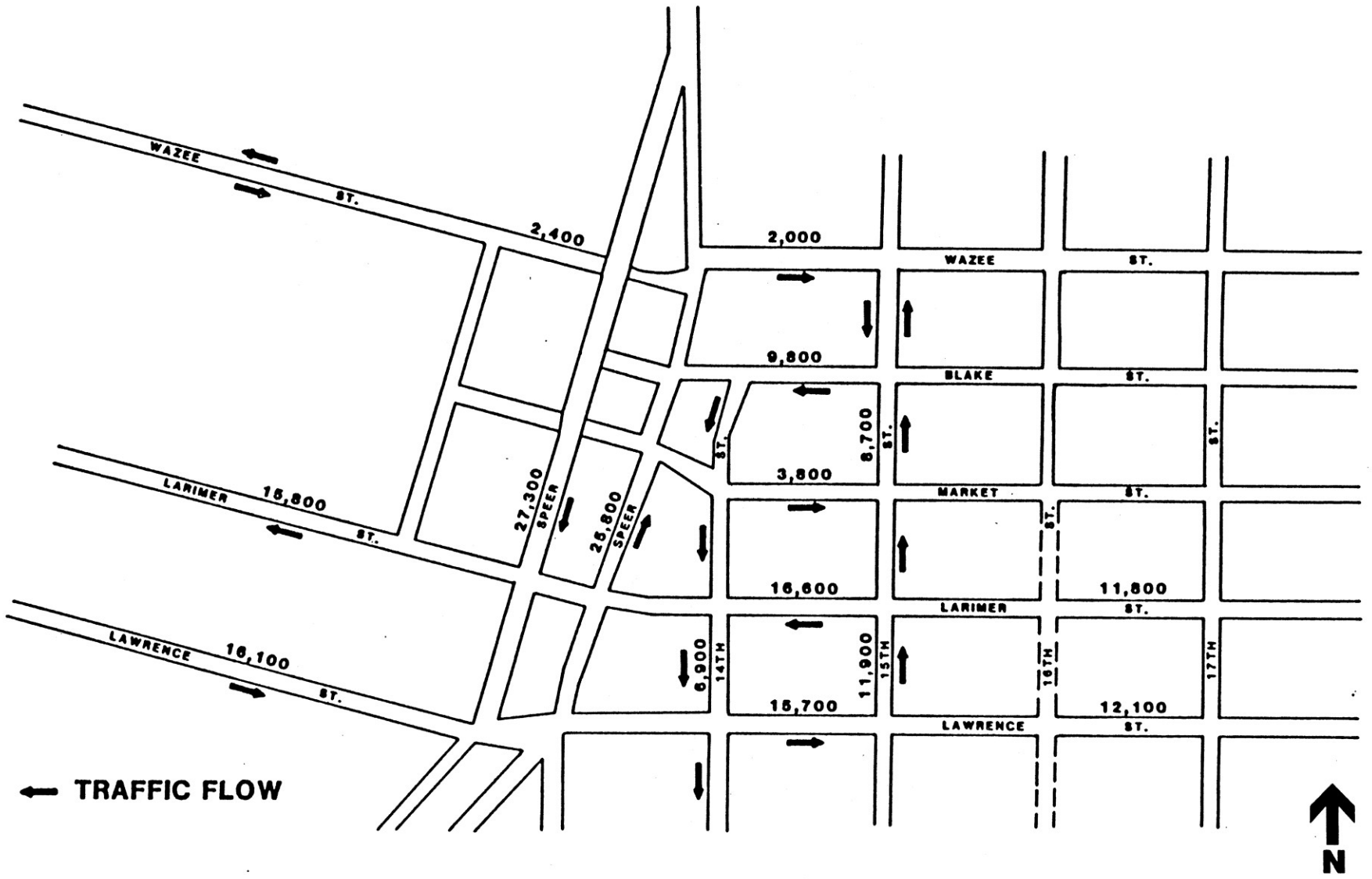
Existing traffic volumes within the impact area of the new Parkway are shown in Figure 15. Presently, major inbound and outbound volumes occur on Lawrence and Larimer Streets, respectively. An average of 31,900 vehicles presently enter and leave the Downtown Area on Lawrence and Larimer Street each day, as indicated by traffic volumes along those streets just west of Speer Boulevard.

Future traffic volumes anticipated by the year 2005 for each build alternative are presented in Figures 16, 17, and 18. The assignments were based on the results of the previously discussed travel demand analysis. Using a screenline analysis, the future volumes west of Speer Boulevard are expected to be 40 percent greater than the existing volumes, while east of Speer Boulevard the increase is approximately 15 percent. These percentages represent a total volume for several streets. The percentage increase for any given street may be higher or lower than the system average, and varies with each alternative.

As shown in Figure 16, by the year 2005 traffic volumes for the Multiple Cross Mall Alternative will increase slightly over existing volumes on Lawrence, and by 4,000 vehicles per day on Larimer. In the Lower Downtown, volumes on Market Street will nearly double and volumes on Blake Street will remain nearly the same as they are today. The increased volume on Blake is primarily due to increased travel anticipated to the Lower Downtown by the year 2005.

Under the recommended Parallel Mall Alternative future traffic volumes in the Skyline Area will remain nearly the same on Lawrence Street as the existing volumes, but will be significantly reduced on Larimer as indicated in Figure 17. This reduction is due to the focusing of traffic outbound from the Skyline and other Downtown areas on 15th Street rather than on Larimer Street. Traffic on 15th to Blake and on Blake between 14th and 15th in the Lower Downtown will increase significantly due to the rerouting of outbound traffic from Larimer.

As mentioned on page 27, a variation of the Parallel Mall Alternative was analyzed to determine the impacts on the surrounding streets if the 15th/Blake intersection was designed to provide only a double left turn from 15th to Blake and three through lanes from the Blake Street approach. This lane configuration would increase the traffic volumes on Blake from 6,000 to 13,000 vehicles per day, and reduce the average



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FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
PELSBURG-HOLT-ULLEVIG
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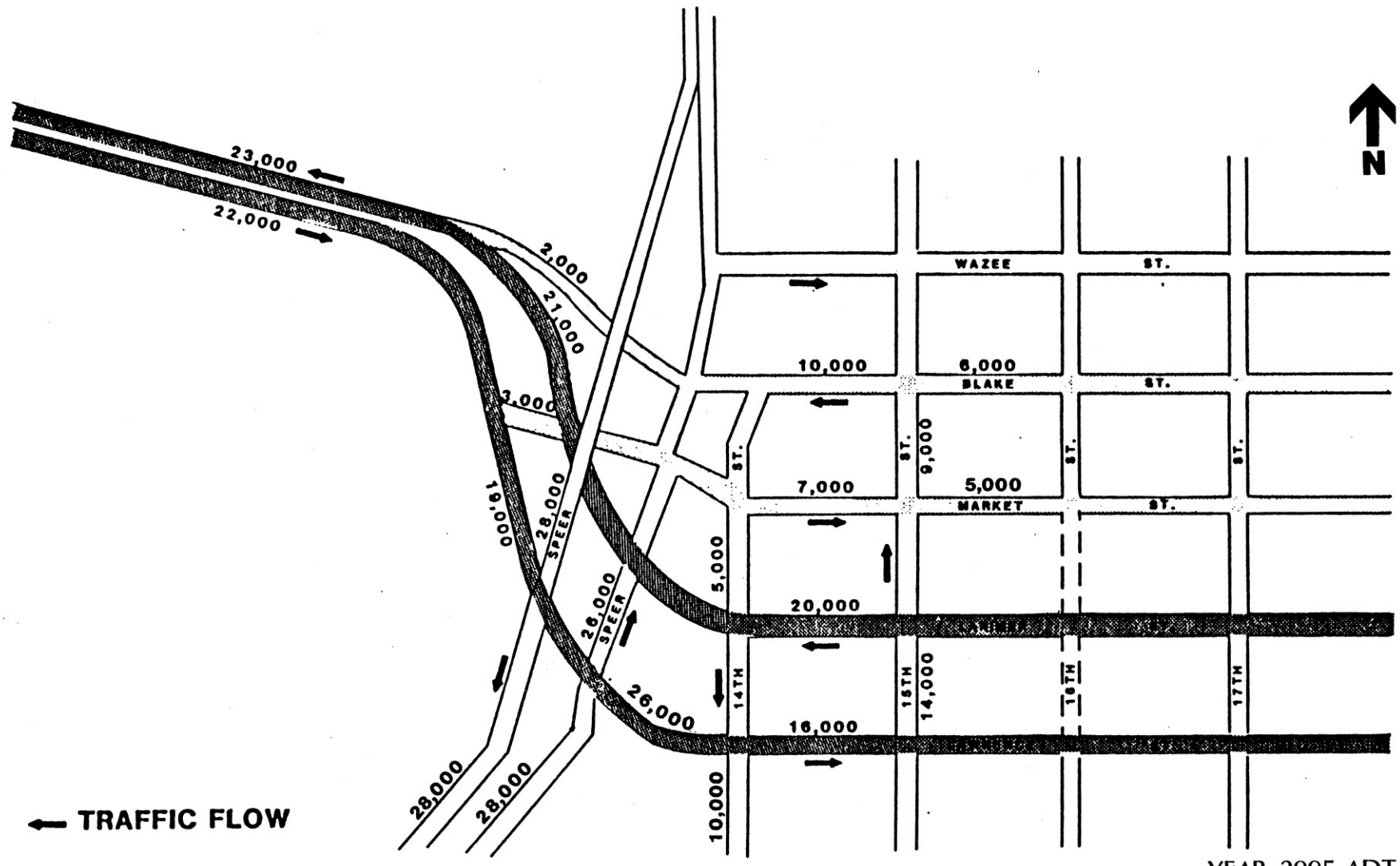
ENVIRONMENTAL RESEARCH CONSULTANTS

EXISTING AVERAGE DAILY TRAFFIC VOLUMES

FIGURE 15



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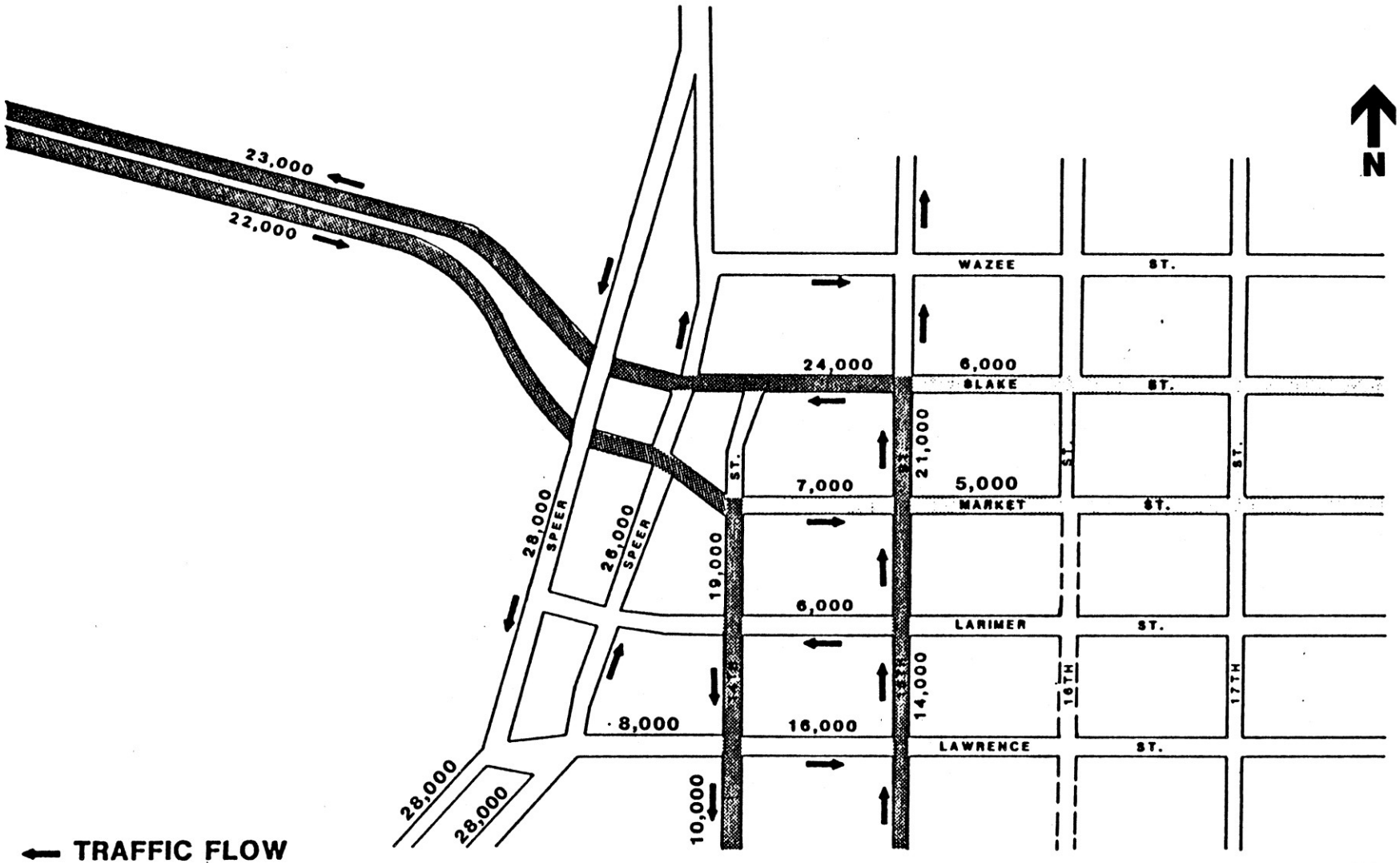
BRW

FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

MULTIPLE CROSS MALL ALTERNATIVE:
FUTURE TRAFFIC VOLUMES

FIGURE 16



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BRW

FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

PARALLEL MALL ALTERNATIVE:
FUTURE TRAFFIC VOLUMES

FIGURE 17

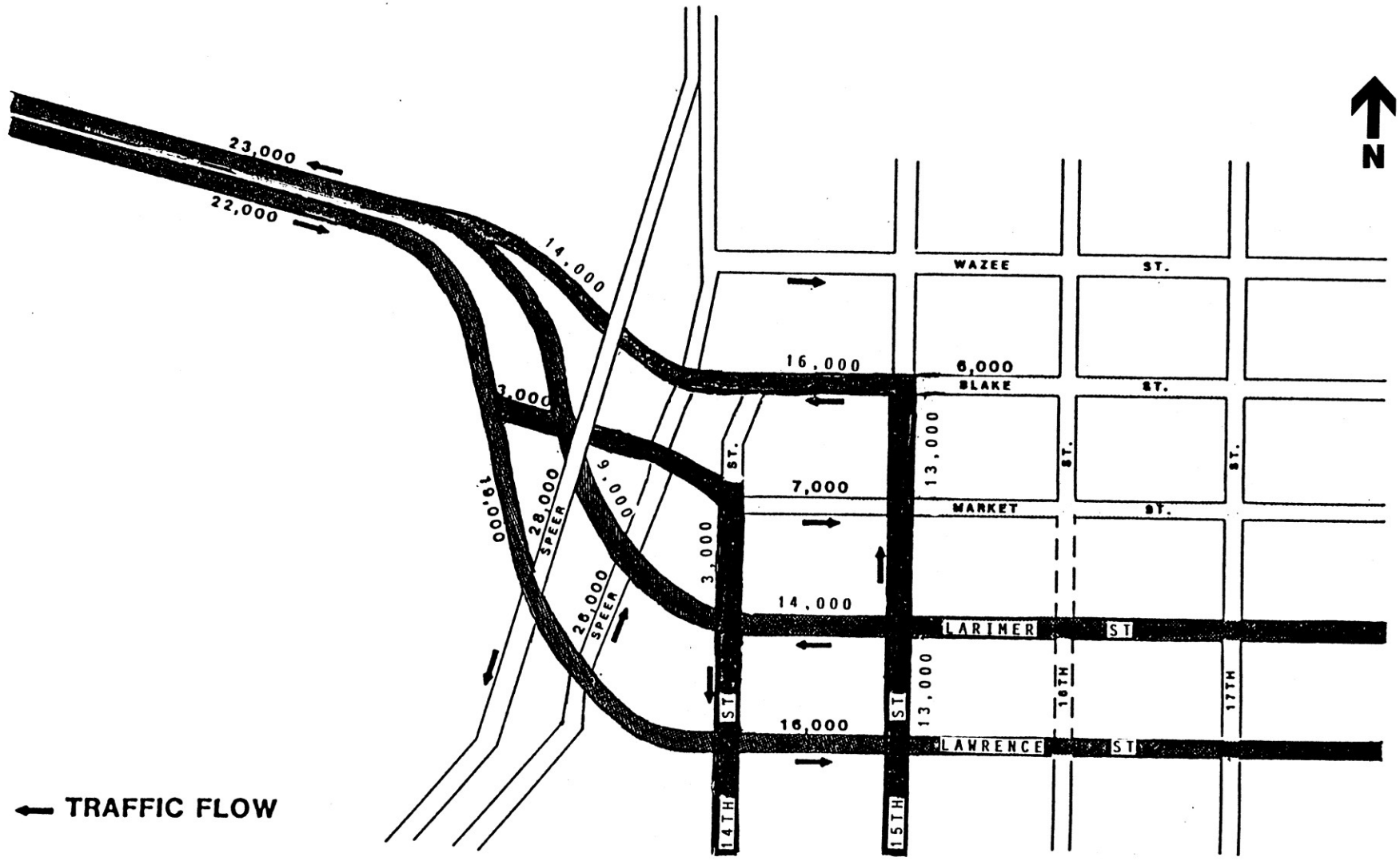
daily traffic (ADT) on 15th Street from 21,000 to 14,000. This balancing of outbound trips between the two streets would have a negative impact on the evening peak hour level of service at the 15th/Market signal since the double left turn lanes at Blake would frequently back up for more than a block. Consequently, the percentage of cycles at the 15th/Market signal that would be blocked by 15th Street queing would increase from 4% (for triple left turn lanes at Blake) to 14% (for double lefts). The resultant level of service for outbound Parkway traffic during rush hour would fall from LOS C to an unacceptable LOS E. Therefore the construction of three left turn lanes at 15th/Blake is recommended.

As shown in Figure 18, the provision of two pairs of one-way couplets under the Combined Alternative will balance the inbound traffic volumes between 14th and Lawrence Streets as well as the outbound volumes between 15th and Blake Streets. A comparison of the three alternatives' access and traffic impact characteristics is summarized in Table 5.

Predicted Accident Experiences

A cursory review of the various roadway elements associated with the alternatives led to the conclusion that the two proposed triple turn intersections present the highest potential for traffic accidents. In an attempt to predict the degree to which the introduction of triple turn lanes at 15th/Blake and Market/14th will create a higher potential for sideswipe accidents, CDOH has analyzed the accident histories of seven similar intersections during a 29-month study period that preceded the Phase I construction of the Colfax Viaduct (January 1, 1981 through May 31, 1983). Projected accident rates and a hazard index for each of the intersections have been calculated by CDOH's Staff Traffic and Safety Branch.

Rates for both property damage only and injury accidents are expressed in terms of the number of accidents per million vehicles entering an intersection. The weighted hazard index (HI) is a numeric expression of the degree of severity of an accident experience at a given location. Intersections with negative HI values have statistically less significant accident experiences than similar Colorado locations. Positive HI values indicate worse-than-average accident experiences.



YEAR 2005 ADT

AURARIA Environmental PARKWAY Assessment

BRW

FLORES ASSOCIATES
MADISON, MADISON, INTERNATIONAL
FELSBURG-HOLT-ULLEVIG
HAMMER-SILER-GEORGE ASSOCIATES
ENVIRONMENTAL RESEARCH CONSULTANTS

COMBINED ALTERNATIVE:
FUTURE TRAFFIC VOLUMES

FIGURE
18

TABLE 5
SUMMARY OF TRAFFIC IMPACTS BY ALTERNATIVE

IMPACT	PARALLEL MALL (recommended alternative)	MULTIPLE CROSS MALL	COMBINED
Access	°Provides primary access to Downtown via 14th & 15th	°Maintains existing access pattern to Skyline Area via Lawrence/Larimer	°Maintains existing access pattern to Skyline Area via Lawrence/Larimer
	°Provides secondary access to Lower Downtown via Market and Blake	°Provides secondary access to Lower Downtown via Market and Blake	°Secondary access to Lower Downtown via Market and Blake
	°Provides access to Skyline Area via 14th & 15th	°Maintains existing access to Skyline Area via Lawrence and Larimer	°Maintains existing access to Skyline Area via Lawrence and Larimer and adds 15th as outbound route
	°Utilizes capacity of 14th/15th	°Matches volume to capacity on Lawrence/ Larimer	°Utilizes capacity of Lawrence/Larimer/15th
	°Minimizes traffic on Lower Downtown Streets except Blake (14th-15th) and 15th (Larimer-Blake)	°Minimizes traffic on Lower Downtown Streets	°Minimizes traffic on Lower Downtown Streets except Blake (14th-15th) and 15th (Larimer-Blake)
Future Traffic volumes on Blake Street (14th-15th) (vs. existing 9,800 ADT)	24,000 A.D.T. 2,400 p.m. peak hour 3 lanes	10,000 A.D.T. 1,000 p.m. peak hour 2 lanes	16,000 A.D.T. 1,600 p.m. peak hour 3 lanes
Future Traffic volumes through Larimer Square (Larimer 14th-15th) (vs. existing 16,600)	6,000 A.D.T. 600 p.m. peak hour 2 lanes	20,000 A.D.T. 2,000 p.m. peak hour 3 lanes	14,000 A.D.T. 1,400 p.m. peak hour 3 lanes

The accident rates and HI values for each of the intersections that were analyzed appear in Table 6. As shown on the bottom two lines of the table, the accident rates at 15th/Blake will more than double during the next 20 years, and the intersection's HI will change from a negative to a positive value. Although this location will not compare favorably with other intersections in the future, the accident problem cannot be considered significant since the positive HI value is not much above zero by comparison, and because zero fatality rates have been projected for all of the intersections. The HI values in the table also do not account for the fact that the proposed turn lanes will be 12 feet in width, whereas those at 8th/Larimer are only 10 feet wide. Comparison of the rates and values for Market/14th indicate that the introduction of triple right turns there will not create a significant accident problem.

Transit Operations

Numerous RTD bus routes serve the Lower Downtown and Skyline Areas and the Auraria Campus.

A bus layover and staging area is presently located in the western portion of the campus near the Tivoli Complex. Buses currently arrive at the staging area from the Downtown Area via Larimer Street and Wazee/Blake. Until recently approximately 600 buses per day utilized Larimer Street through Larimer Square and the Auraria Campus to access the staging area and to serve the Auraria Campus and western Denver areas. This number of buses was reduced to approximately 200 buses per day and the remaining buses relocated to routes along Blake and Wazee Street.

The introduction of the Auraria Parkway will affect the location of transit routes to and from the Auraria Campus. The recommendation is to retain two RTD bus routes and the Tivoli Trolley on Larimer Street in the central campus area. The buses and trolleys will travel west on Larimer and then turn around in a cul-de-sac at 10th Street to return east toward Speer (see Figure 2 on page 3). RTD patrons with destinations not served by the South Broadway (00) or East Colfax (15) routes will have to transfer (in the CBD) to other routes, which will require walking 0-2 blocks. On an average weekday there are approximately 1400 boardings and 1100 deboardings on Auraria Campus.

TABLE 6
EXISTING AND PREDICTED ACCIDENT DATA
FOR INTERSECTIONS WITH MULTIPLE TURN LANES

	INTERSECTION LOCATION								
	15TH/BLAKE		8TH/LARIMER	8TH AVENUE/ KALAMATH	LAWRENCE/15TH	LARIMER/SPEER	**MARKET/14TH**		COLFAX/8TH
	EXISTING SINGLE LEFT FROM 2-WAY 15TH	PROPOSED TRIPLE LEFT FROM 1-WAY 15TH	TRIPLE LEFT FROM 1-WAY 8TH STREET	TRIPLE LEFT FROM 1-WAY 8TH AVENUE	DOUBLE LEFT FROM LAWRENCE STREET	DOUBLE LEFT FROM LARIMER TO SB SPEER BLVD.	EXISTING DOUBLE RIGHT FROM MARKET	PROPOSED TRIPLE RIGHT FROM MARKET	TRIPLE RIGHT FROM COLFAX
ACCIDENT HISTORY (1-1-81 TO 6-1-83):									
PROPERTY DAMAGE ONLY (PDO)	31	–	19	58	19	27	4	–	15
INJURY	6	–	13	8	2	6	0	–	1
FATAL	0	–	0	0	0	0	0	–	0
1982 AVERAGE DAILY TRAFFIC (ADT) VOLUMES ENTERING THE INTERSECTIONS (EXCEPT AS NOTED)	7,400 (1981)	PROJECTED ADT (YEAR 2000) 27,000	37,300	39,400	26,950	39,550	9,000 (1979)	PROJECTED ADT (YEAR 2000) 26,500	25,400
1982 TOTAL ACCIDENT RATES * (EXCEPT AS NOTED ABOVE)	**5.72**	**14.20**	0.97	1.90	0.89	0.95	**0.51**	**4.34**	0.72
1982 WEIGHTED HAZARD INDEX (EXCEPT AS NOTED ABOVE)	**-9.16**	**+4.97**	-11.31	-14.48	-16.29	-15.67	**-17.88**	**-8.88**	-13.18

* THE NUMBER OF ACCIDENTS PER MILLION VEHICLES ENTERING THE INTERSECTION.

The recommended Parallel Mall Alternative is the only alternative that would accommodate a Larimer Street bus corridor on AHEC campus. The in and outbound legs of the Multiple Cross Mall and Combined Alternatives cut off access to Larimer Street west of Speer Boulevard. Under these alternatives the bus routes destined to Auraria would be relocated to the Auraria Parkway, thus inconveniencing riders destined for the campus, and requiring more bus pullouts and signalized pedestrian crossings along the Parkway. While the Multiple Cross Mall and Combined Alternatives could accommodate bus turn outs, fewer signalized intersections would be located along the Parkway for use by riders walking to the campus. Bus pullouts for the Parallel Mall Alternative are planned along both sides of the Parkway intersection at 9th Street (and possibly at 12th Street as well).

The existing bus staging area which is located immediately west of the Tivoli complex will be relocated. RTD, AHEC, and the City and County of Denver will examine alternative staging areas in the Lower Downtown area to determine the future staging locations.

In conclusion, the recommended Parallel Mall Alternative will permit the retention of a bus corridor on Larimer in the Auraria Campus, while the other alternatives would reduce the potential for its development.

Physical Impacts

Air Quality

The Colorado Department of Highways has coordinated this project (along with the related Lawrence and Larimer Viaduct Replacement projects) with the Air Pollution Control Division (APCD) of the Colorado Department of Health. At a scoping meeting on November 17, 1983 between CDOH and APCD, it was decided that CDOH would prepare a comprehensive air quality study (both monitoring and modeling) for the Lawrence Viaduct replacement project. Carbon monoxide levels were monitored by CDOH near the Tivoli Center between December 1983 and February 1984. CDOH completed the air quality modeling in January 1985. The air quality modeling included the Auraria Parkway and nearby receptors in the study area.

Although results of the air quality modeling indicated that the proposed project would not result in a violation of National Ambient Air Quality Standards, APCD has requested further assurance that "...the traffic levels north of Speer will not create a worse air quality problem and/or that no more people will be exposed to high levels due to the rerouting." (See APCD letter, Appendix A).

This project will not increase overall traffic volumes in the lower downtown area. The rerouting of traffic as described for the recommended alternative will result in a shift in the levels of carbon monoxide at different intersections in lower downtown. CO concentrations will be slightly higher at the 15th/Blake intersection for the recommended alternative than for the no-build. For the no-build, CO concentrations would be higher in the Larimer Square area than for the recommended alternative. However, in terms of the overall lower downtown area and the CBD, there will be no significant difference in CO levels or in the number of people exposed to a given concentration of CO, regardless of the alternative selected. Given this assurance, APCD concurs with CDOH that this project is consistent with the State Implementation Plan (SIP).

The Denver region has been designated as an air quality nonattainment area by the Environmental Protection Agency (EPA). Transportation control measures are included in the Denver element of the SIP. This project is consistent with all control measures. Based on the current source of funding (state and local only), this project has not been programmed in the current Transportation Improvement Program (TIP) for the Denver region. Therefore, the Federal Highway Administration has made an independent determination that this project conforms to the SIP. If Denver plans to use federal funds to construct future phases of this project, it will be added to a future year TIP which conforms to the SIP.

Noise

CDOH has analyzed the future noise impacts of the proposed project using the FHWA Highway Traffic Noise Prediction Model. The model predicts noise levels based upon: 1) design hourly volumes for autos, medium weight trucks, and heavy trucks; 2) distance from the roadway to the noise sensitive receptors; and 3) roadway geometry and the surrounding terrain. Noise levels are expressed in terms of Leq, which is defined as the equivalent steady state sound level which contains the same amount of acoustic energy in a given period of time as the actual, variable sound level during that period.

Results of this analysis indicate that the increase in traffic noise levels produced by the proposed project will not be significant. Exterior noise levels at the Wazee businesses will increase from an existing average (Leq) of 61.4 decibels (dBA) to 69.8 dBA in the year 2005. At the Downtown businesses the Leq levels are within the range between 63.4 and 65.6 dBA today and are predicted to increase to Leq 67.2-69.4 dBA in the future. All of these noise levels are below 72 dBA, the design noise level established by FHWA as the threshold requiring the consideration of noise abatement measures for businesses.

Since there are no residential receptors in the project area, the only other sensitive land use near the Parkway is the active sports use of AHEC's athletic facilities. The 67dBA contour (the design noise level for recreational uses) for the Year 2005 Leq noise level runs along the straight side of the 440-yard oval track and through the practice area for tennis instruction. AHEC administrators do not want an obstrusive barrier erected to shield this limited area that will only experience noise levels higher than 67dBA during peak hours. Therefore, no noise mitigation is recommended for this project.

Section 4(f) Parkland Involvement

The AHEC athletic facilities are fenced, used exclusively by AHEC students and staff, and are not for use by the general public. There are no other 4(f) properties in the project area. Therefore, there is no 4(f) involvement for this project.

Vibration

A limited examination of the potential vibrational impacts that the recommended alternative might have upon the buildings along 14th, 15th, Blake, and Wazee Streets has concluded that none of these structures will be particularly sensitive to the Parkway's construction or operation. Assessment of that potential is based upon a study that was conducted for FHWA in 1978[1], from which the following information is drawn.

The nature of building damage from man-made environmental vibration is generally in the form of a fatigue failure over a long time period. The levels of vibration induced in a building by traffic operations are on the order of magnitude of vibrations caused by normal indoor activities such as footsteps, closing doors, playing loud music, or moving heavy objects. Natural phenomena such as thunder, high winds, and minor earth tremors may also induce building vibration that exceed levels generated by traffic. Therefore, the possibility of identifying traffic-induced vibration as a single source of building damage is quite difficult to establish, and structural damages resulting from traffic-induced vibrations do not appear to be a highly probable situation. Considering all aspects, traffic-induced vibration appears to be an annoyance problem rather than a physical one.

Wetlands

In compliance with Executive Order 11990, "Protection of Wetlands" and U.S. Department of Transportation Order 5660.1A, "Preservation of the Nation's Wetlands," an on-site inspection was performed by the CDOH Staff Ecologist on October 21, 1986. No wetland sites were found within the project corridor based on that survey. Therefore, this project has no wetland involvement.

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[1]"Engineering Guidelines for the Analysis of Traffic-Induced Vibration," Report FHWA-RD-78-166, February 1978.

Threatened and Endangered Species

On November 13, 1986 coordination (via telephone) was conducted between U.S. Fish and Wildlife (Salt Lake City) and the CDOH Staff Ecologist. A determination was made that no threatened and endangered species exist in the project area (see memo in Appendix A documenting this coordination).

Hydrology/Floodplain/Water Quality

The hydrology and floodplain assessment for this project has been prepared in accordance with Executive Order 11988 and procedures and requirements contained in the Federal-aid Highway Program Manual, Volume 6, Chapter 7, Section 3, Subsection 2 (FHPM 6732).

A small portion of the project, that segment of the parkway between 7th and 9th Streets, lies within the extreme fringe of the South Platte River's floodplain as defined by the Federal Emergency Management Agency (FEMA). The design of the Parkway has been coordinated with the Urban Drainage and Flood Control District to ensure that the roadway will remain stable and usable through a 100-year flood. There will be no longitudinal or significant encroachments as defined by FHPM 6732. Along Cherry Creek, the 100-year flood event will be contained by the existing channel walls.

The Multiple Cross Mall and the Combined Alternatives would have required a new bridge over Cherry Creek near Lawrence Street. The inbound and outbound lanes of the proposed Parallel Mall Alternative will cross the channelized creek over the existing Market and Blake Street bridges, respectively. Therefore, no new piers or abutments will be constructed in the channel. As described in Chapter 1, however, as yet to be determined improvements to the 14th Street/Cherry Creek Corridor during the second phase of construction may include a lower level walkway along or across the creek. If this occurs, any disturbances in the creek will be brief and temporary in nature, and the project will have only minimal temporary impact on water quality.

During final design of the second construction phase of the project, CDOH will determine what permits are appropriate. These could include a Nationwide 404 permit, a Nationwide 401 water quality certification, and/or a Division of Wildlife S.B. 40 certification.

Community Impacts

Right-Of-Way Acquisition

The AHEC has reserved an 80 foot strip of land along the northern edge of its campus to accommodate the proposed Parkway alignment. As discussed in the project costs section of Chapter 1, AHEC and the City and County of Denver have agreed that the portion of this strip that is required for the Parkway will be transferred to the City in exchange for the City's vacation of its ROW of the streets shown in light blue in Figure 2 on page 3. Table 7 summarizes the approximated areas of the ROW street vacations and the project ROW needs both on and off campus. AHEC will dedicate approximately 7.42 acres and will receive an estimated 11.37 acres in return. Off campus, approximately 1.66 acres will be acquired.

The intersection at 15th and Blake will be enlarged on the southwest corner to provide for the triple left turn lanes that will be required to accommodate the westbound volume of traffic destined for I-25 via the Parkway and the Walnut Viaduct. Preliminary design indicates that three turn lanes of standard width and an eight foot wide sidewalk can be constructed without taking any portion of the existing building on the corner parcel. However, the acquisition of approximately 1,400 square feet from that parcel will eliminate the existing access from 15th Street and will take the parking area that accommodates 6-8 vehicles.

ROW will also be required on the southwest corner of 6th and Walnut Streets to construct a newly aligned at-grade connection from 7th Street to the area beneath the Walnut Viaduct. As in the case of 15th and Blake, this taking will only involve an unimproved portion of the parcel, and will not significantly damage the existing use of it.

The acquisition of all private land associated with the implementation of the proposed project will be in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

TABLE 7

RIGHT-OF-WAY ACQUISITIONS AND VACATIONS

Parkway Acquisition

°Auraria Property		
Parkway	164,383 S.F.	3.77 Ac.
Seventh Street	9,900 S.F.	0.23 Ac.
Reserved Land South of Existing Wazee (Auraria)	149,280 S.F.	3.42 Ac.
SubTotal	323,563 S.F.	7.42 Ac.
°Other		
Walnut St. Connection	39,550 S.F.	0.91 Ac.
S.W. Corner 15th & Blake	1,395 S.F.	0.03 Ac.
Market/Blake realignment near Speer	19,905 S.F.	0.46 Ac.
SubTotal	60,850 S.F.	1.40 Ac.
TOTAL NEW RIGHT-OF-WAY	395,518 S.F.	9.08 Ac.

Street Vacations

°Auraria Property		
8th Street	142,300 S.F.	3.27 Ac.
9th Street	32,400 S.F.	0.74 Ac.
Walnut Street	61,600 S.F.	1.41 Ac.
Larimer Street	87,200 S.F.	2.00 Ac.
Lawrence Street	172,100 S.F.	3.95 Ac.
SubTotal	495,600 S.F.	11.37 Ac.
°Other		
Wazee at West	47,830 S.F.	1.10 Ac.
Reserved Land	20,000 S.F.	0.46 Ac.
SubTotal	67,830 S.F.	1.56 Ac.
TOTAL STREET VACATIONS	563,430 S.F.	12.93 Ac.

Economics

The greatest potential economic impacts of the proposed project on the businesses along Wazee Street and in the Lower Downtown are those effects related to any changes in parking, access, and traffic volumes.

The recommended Parallel Mall Alternative will provide a parking area behind the Wazee businesses to replace the on-street spaces that will be lost to the Parkway. Access to these businesses, via Wazee, 12th, 11th, 9th, and 7th Streets will be significantly improved, particularly in view of the future Platte Valley development that is discussed in the next section.

The lane requirements and on-street parking provisions for each alternative in the Downtown area are shown in Table 8. In each case, the cross-sections of 14th, Lawrence and Market Street remain constant.

The cross-sections for the outbound streets (15th, Larimer, and Blake), however, vary by alternative. Curb parking will be provided along those blocks where the lane requirements for future outbound traffic volumes do not fill existing street widths. No street widenings, with the exception of improvements to the intersection of Blake and 15th under the Parallel Mall and Combined Alternatives, are proposed.

Comparison of the existing on-street parking situation to that proposed by the recommended Parallel Mall Alternative indicates that the on-street parking supply will be increased along Larimer Square, maintained along 14th, Lawrence, and Market Streets, and diminished along 15th and Blake Streets. Businesses along 15th and Blake will not likely suffer any loss in their business volumes as a result of the project because of the adequate supply of off-street parking in the immediate vicinity.

As previously stated on page 4, the only directional changes to the Downtown street grid will be the conversion of: 1) 15th Street between Market and Blake) from two lanes northbound and one lane southbound to three lanes northbound; and 2) the 15th Street Viaduct from a two-way street to a northbound movement only (toward I-25). These changes will not affect the regional access into the area because the 15th Street Viaduct does not have any direct connections to I-25.

TABLE 8
DOWNTOWN LANE REQUIREMENTS AND ON-STREET PARKING

Downtown Block	Alternative			
	No Build (Existing)	Parallel Mall (recommended)	Multiple Cross Mall	Combined
Lane Requirements				
14th (Market to Larimer)	3	3	3	3
15th (Market to Larimer)	3	4	3	4
Lawrence (14th to 15th)	4	4	4	4
Larimer (14th to 15th)	4	2	3	3
Market (14th to 15th)	3	2	2	2
Blake (14th to 15th)	3	3	2	3
On-Street Parking				
14th (Market to Larimer)	Both Sides	Both Sides	Both Sides	Both Sides
15th (Market to Larimer)	One Side	None	One Side	None
Lawrence (14th to 15th)	One Side	One Side	One Side	One Side
Larimer (14th to 15th)	One Side	Both Sides	Both Sides	Both Sides
Market (14th to 15th)	Both Sides	Both Sides	Both Sides	Both Sides
Blake (14th to 15th)	Both Sides	One Side	Both Sides	Both Sides

Since there will be no significant increase in the future noise, vibration, or air pollution levels at the Downtown businesses with the recommended Parallel Mall Alternative (as concluded in those previous sections), the increases in the traffic volumes along 15th, Blake, and Wazee Streets will not have a significant impact on the pedestrian environment of those streets.

Land Use

The recommended Parallel Mall Alternative will have several positive effects on the surrounding land uses. The alignment of the Walnut Viaduct was selected by the Colfax Viaduct Task Force partially because an alignment along Wazee accommodates AHEC's long established goal to remove heavy traffic flows on Lawrence and Larimer from the interior of the pedestrian-oriented Auraria Campus. The relocation of traffic from these streets will allow for the future vacation of these rights-of-way, which will permit the re-use of that land as determined by AHEC officials.

The 7th and 9th Street intersections at the Parkway will provide access to the Auraria Campus, Tivoli Denver, and the Platte Valley. Redevelopment of the Platte Valley (as currently conceived) will change existing land uses and influence future traffic patterns in the surrounding area.

The Platte Valley area, which includes the railroad yards that are behind the row of businesses on lower Wazee Street, will be redeveloped according to a plan that has been jointly prepared by the area's landowners and the City and County of Denver. The Platte Valley Plan will consolidate through-rail operations to the mainline area so that much of the extensive side yard areas can be abandoned. This land will be redeveloped to provide a mixture of office, residential, retail, and open space uses served by a new street system.

The Plan calls for major traffic connections between Downtown and the Platte Valley at 9th, 15th, and 20th Streets as well as Speer Boulevard. One of these new roads will begin at the 9th Street signal near the touchdown point of the new Walnut Viaduct and connect to the major "spine" road for the Platte Valley Redevelopment Area. The new Parkway will provide one of several links to the new street network that will serve this large area.

The Platte Valley Plan also calls for rebuilding Speer Boulevard at-grade to provide attractive open space along Cherry Creek. The eventual removal of the existing inbound Speer Viaduct and the reconstruction of Speer at-grade from a point near Wazee Street south would permit a fully directional intersection with the Auraria Parkway without the costly ramps which would otherwise be required if Speer remained on structure. This reconstruction would improve access to all areas north and west of the present touchdown point of inbound Speer north of Larimer.

Also suggested as part of future plans to return inbound Speer to grade from Wazee Street south is the shifting of the outbound Speer traffic lanes to the west. This consolidation of Speer Boulevard would benefit future development of the area near Cherry Creek.

The size of and the access to the open space parcels created in the Speer Boulevard Corridor and along Cherry Creek vary widely under each of the three build alternatives. Both the Multiple Cross Mall and Combined Alternatives sweep through the eastern portion of the Auraria Campus, severing existing Campus parking lots from Auraria. Additionally, under these alternatives, the parcels created on both sides of the in and outbound legs of Speer by the multiple Parkway connections form parcels which are difficult to develop due to their restricted size and access constraints. Parcel development potential is better under the recommended Parallel Mall Alternative as less land is severed from the Auraria Campus, and larger and more accessible parcels are created.

Social Impacts

Historic Resources

The entire potential impact area of the Parkway project has previously been surveyed for historical sites under various studies. Within this area, four historic districts and seven historic properties have been identified as either being on or being eligible for the National Register of Historic Places. On behalf of FHWA, CDOH has applied the criteria of effect pursuant to Part 800.4 of the Advisory Council on Historic Preservation's regulations to the following historic sites:

1. Larimer Square Historic District (1400 Block of Larimer)
2. Lower Downtown Denver Commercial District (that area bounded by 14th and 20th Streets, and by Larimer and Wynkoop)
3. West Wazee Street Warehouse District (1123-1333 Wazee)
4. 901 Wazee Street
5. Auraria-9th Street Historic District
6. St. Elizabeth's Church
7. St. Cajetan's Church
8. Emmanuel-Shearith Israel Chapel
9. Tivoli Brewery
10. Colorado Ice and Storage Company
11. Midwest Steel and Iron Works Company

The State Historic Preservation Officer (SHPO) has concurred in CDOH's determination (see CDOH's letter of May 28, 1986 in Appendix A) that Sites 5-11 are located outside the impact area for all alternatives and therefore the project would have no effect, or in some cases, a long term beneficial effect on these sites once major traffic is removed from Lawrence and Larimer Streets between 7th and 12th Streets.

The retention of the buildings on Sites 3 and 4, which are eligible for National Register designation, is highly dependent on the continued economic viability of those sites. The provision of access and parking is critical to this area's continued viability. All alternatives include a parking area along the rear of the Wazee businesses, but vary as to the number of access points. The recommended Parallel Mall Alternative provides the best access with two signalized, fully directional intersections and partial intersections at 11th and 12th Streets. The Multiple Cross Mall and Combined Alternatives provide two signalized intersections and a right-in, right-out at 12th Street.

All of the alternatives also soften the visual impact of the street on the Wazee businesses by providing a continuous 31-foot wide planting/ sidewalk area between the street and the buildings. A consulting firm of urban designers has been hired by the City and County of Denver to determine how landscaping and lighting elements can best enhance the appearance and urban character of the Parkway, the buildings along Wazee, and the downtown streets affected by the project.

The SHPO has concurred in CDOH's determination that none of the alternatives would have an adverse effect on the two eligible sites on Wazee Street if certain mitigation measures are included in the construction of the project. Those stipulations are included in the Memorandum of Agreement (MOA) for this project that is discussed below.

The SHPO has also determined that there will be no effect on the Larimer Square Historic District since the Parallel Mall Alternative will reduce traffic volumes on Larimer between 14th and 15th Streets, and since the other two build alternatives would approximately maintain existing traffic patterns and volumes in the area.

Without any mitigation measures, the increased traffic volumes associated with all three build alternatives would have an adverse effect on a few blocks on the west end of the Lower Downtown Denver Commercial District, where a pedestrian oriented environment is envisioned by business owners. The Multiple Cross Mall Alternative would have the least adverse impact since traffic volume increases in the area would be minimal. The Combined Alternative would increase Blake Street volumes in the 1400 block from the existing 10,000 vehicles per day (v.p.d.) to projected 16,000 v.p.d. by the year 2005. The Parallel Mall Alternative will increase that volume to 24,000 v.p.d.

It should be noted that construction of the recommended Parallel Mall Alternative will allow for more extensive mitigation of traffic volume increases on downtown streets in general. Because it has a lower roadway construction cost than the other two build alternatives, it makes more of the limited amount of funding available for the pedestrian block face improvements that are proposed on Blake between 14th and 15th, on 15th Street between Larimer and Blake, and along other nearby streets as shown in Figure 4 on Page 7. The remainder of the streets in Lower Downtown will have little Parkway traffic, permitting sidewalks to be widened and other pedestrian amenities to be developed independent of this proposed project.

The SHPO has concurred with CDOH's determination that the proposed Parkway project will have an effect on three historic sites (numbers 2, 3, and 4). An MOA has been prepared for approval by FHWA, SHPO, the Advisory Council on Historic Preservation, and the City and County of Denver to establish a plan to mitigate adverse effects (see Appendix A). This agreement will be signed by all of these parties before the project can become eligible for federal funding. The required mitigation measures that will be included in the MOA are listed in the final section of this Chapter.

The MOA does not discuss the Speer Boulevard Parkway, or the Blake, Market, and Lawrence Street bridges over Cherry Creek because the SHPO does not consider this segment of Speer nor any of these bridges to be eligible for the National Register.

There is no 4(f) involvement with any of the eligible properties. Boundary determinations have been made that there will be no taking of these properties by ROW acquisition or by easement.

Archaeology/Paleontology

The proposed Parkway alignment lies in a highly developed area of Denver where previous roadway construction and industrial and business development has severely disturbed the original ground. It has been concluded that any archaeological resources which may have been present on the ground surface in the project area at one time have undoubtedly been collected or destroyed. (The complete archaeological assessment is available for review at District 6 of CDOH). In the unlikely event that archaeological/palaeontological resources are discovered during project construction, work will be halted immediately and the CDOH Staff Archaeologist will be notified for appropriate action.

Summary of Mitigation

The following list summarizes the specific mitigation measures required by this document, which are to be employed either before, during, or after construction of the recommended Parallel Mall Alternative, to minimize the project's potential impact to the social and physical environment.

1. Access points to 901 Wazee Street and the West Wazee Street Warehouse district at 9th, 11th, and 12th Streets will be maintained. In addition, a parking area will be provided behind thesebuildings on Wazee Street to replace parking that will be removed from the existing street. The SHPO shall be afforded the opportunity to review the parking area plans when available.

2. The following improvements will be made along the 1300 and 1400 Block of 15th Street and the 1400 Block of Blake Street within the boundaries of the Denver Lower Downtown Commercial District:

   Streetscape improvements - special lighting
   Pedestrian amenities - benches, trees, and railings
   Widen sidewalks where possible

   The SHPO will be afforded the opportunity to comment on the proposed improvements during the urban design process.

3. Traffic detours will be provided where necessary to maintain traffic flow.

4. Any detours or traffic pattern changes will be coordinated with RTD.

CHAPTER 5:

COMMENTS AND COORDINATION

The proposed project has been coordinated according to the requirements set forth in the Colorado Department of Highways Action Plan and the Federal Highway Administration program manuals. Coordination letters and a chronology of this project are contained in Appendices A and B, respectively.

Public Involvement History

As stated at the beginning of Chapter 1, much of the information in this EA was developed in a detailed study that was conducted for the City and County of Denver between September 1985 and July 1986. An integral part of that Auraria Parkway Corridor Study was a multi-faceted public involvement process. Public input throughout the development of the proposed project was fostered through a variety of approaches which are briefly described below.

The Public Agency Coordinating Committee

Early in the Study a Public Agency Coordinating Committee was established which included representatives from the Denver Planning Department, Denver City Engineer's Office, Denver Traffic Engineering Office, RTD, DRCOG, CDOH, the SHPO, and AHEC. This committee provided agency input to the Study process. Representatives from the Downtown Area, including the Denver Partnership and other business interests, regularly attended the meetings of the Coordinating Committee.

Study Newsletters

Newsletters were prepared to inform interested groups, individuals and the public about the progress of the Study and to announce the time and place of the public meetings.

Issues of the Auraria Parkway Corridor Study Newsletter were mailed to those on the project mailing list in November 1985, and January, February, and April of 1986. The project mailing list, which included over 260 names, was updated with each issue of the newsletter.

Public Meetings and Hearings

Three public meetings were included as an integral part of the Study that was done for the City to assure that the general public and affected individuals and groups were aware of the Auraria Parkway Study and periodically brought up to date regarding the Study's progress. These public meetings, and the subsequent public hearing that was held by the Denver Planning Board, are summarized below.

The first public meeting was held on Tuesday, November 19, 1985. Three major issues were raised by those attending the meeting. First, many felt that the existing traffic flow directions on the Downtown street grid should not be changed. Retention of access to existing developments was also a concern. Third, the maintenance of direct access to the freeway system was emphasized.

The second public meeting was on Wednesday, February 19, 1986. Three final alternatives and a long term staging option were presented for discussion. The majority of concerns expressed at this meeting came from business representatives in Lower Downtown. Strong concerns were expressed about traffic impacts in the Lower Downtown Area.

The third and final public meeting was held on Tuesday, May 6, 1986. A summary of the study process and findings, and the recommended alternative were presented. The major concerns expressed by those attending the meeting focused on the impacts that the recommended alternative might have on the Lower Downtown Area.

On June 11, 1986, the Denver Planning Board held a public hearing on the project. Testimony received at the hearing included concerns about the impacts of closing the 15th Street Viaduct on RTD bus routes, and a statement that the recommended Parkway route was inconsistent with the preservation issue as outlined in the Downtown Plan.

Following the closing of the public hearing but prior to its vote, the Board received a letter from AHEC in favor of the Parallel Mall Alternative, and three letters expressing opposition to the recommended route. Those letters were from Historic Denver (a non-profit organization), a representative of the Development Association of Lower Downtown, and St. Charles, Inc., which is a small neighborhood association that is registered with the Denver Planning Office.

On July 2, 1986, the Board, by a 5-0 vote (with two abstentions), passed a motion to recommend approval of the Parallel Mall Alternative route for the Parkway. Immediately prior to its vote, the Board reviewed the projected traffic volumes on Lawrence, Larimer, Blake, and Market Streets for the Multiple Cross Mall and Combined Alternatives (as shown in Figures 16 and 18 on pages 40 and 43), and was not convinced that those alternatives would benefit Lower Downtown.

Individual and Area Representative Meetings

Numerous one-on-one and area representative meetings and work sessions were held with interested business and property owners in the project area (see the Project Chronology in Appendix B). Meetings with individual agencies affected by or involved in the implementation of the Auraria Parkway project were also held. Major meetings with area representatives included the following:

February 5, 1986	Presentation to the Lower Downtown Property Owners Association
February 10, 1986	Work Session with Wazee Businesses
February 14, 1986	Work Session with Lower Downtown Business Representatives
February 26, 1986	Denver Partnership Work Session on the Parkway

The public participation process provided significant input to the Auraria Parkway Corridor Study. Comments received from the Public Agency Coordinating Committee, the public during the public meetings, and affected businesses and property owners has led to the decision by the City and County of Denver, CDOH, and FHWA to recommend the Parallel Mall Alternative for construction.

That decision is based upon the conclusion that this alternative will provide sufficient access from the Walnut Viaduct to the CBD while minimizing the negative impacts on the surrounding environment. That decision has been supported by the majority of interested and affected parties, although some of the business owners along 15th and Blake Streets still are concerned about the increased traffic volumes on their streets.

Remaining Public Participation

This document was reviewed and approved by FHWA prior to its availability for public review. A Notice of Availability and Public Hearing has been sent to all parties on the project mailing list. The same notice has been published in the Denver Post to notify the general public. A public hearing will be held by CDOH on February 18, 1987 at 7:00 PM at the Auraria Student Center 955 Lawrence Street, Room 330. This is the same location where the City and County of Denver's May 6, 1986 public meeting on the project was held.

At the hearing any party and the general public will be given the opportunity to ask questions and comment on the project for the record. Written comments will be accepted during the 10 calendar days following the hearing.

After the public review period and hearing CDOH and the City and County of Denver will evaluate all comments received from the public and reviewing agencies. If it is determined that the project described in Chapter 1 will have no significant impacts, CDOH will send a Finding of No Significant Impact (FONSI) to FHWA requesting their adoption. That action constitutes route location approval and the project would then become eligible for federal funding.

APPENDIX A

COORDINATION LETTERS

STATE OF COLORADO

DEPARTMENT OF HIGHWAYS

4201 East Arkansas Ave.
Denver, Colorado 80222
(303) 757-9011

December 4, 1984

Mr. George Scheuernstuhl
Denver Regional Council of Governments
2480 West 26th Avenue
Denver, CO 80211

Dear Mr. Scheuernstuhl:

The Colorado Department of Highways is proceeding with the route location approval process for Phase three of the Colfax-Lawrence-Larimer Viaduct Replacement Project - the functional replacement of the Lawrence viaduct. The preferred alternative consists of an eastbound Walnut viaduct. Also included in this project is the construction of a full access interchange between Colfax and I-25 as a later phase or phases. An environmental assessment is being prepared for this project.

Again as with Phase two - the functional replacement of the Larimer viaduct- this project does not significantly increase the overall capacity of the existing network. However, completion of full access to the Colfax interchange will change traffic patterns within the interchange complex and possibly attract more trips. As you are aware, a detailed alternative analysis led to the identification of above mentioned projects. As part of this analysis, traffic projections were developed based upon the 20 AD computer run. In comparing these volumes with the 20 BP computer run, there is a maximum of 15% difference (see Figure 1). We feel this is within the range of acceptable variation and re-analysis of traffic projections is not warranted.

Further, since the environmental assessment will seek interchange approval, a 20 year design life is required by the Federal Highway Administration. Therefore, the 20 AD traffic volumes have been adjusted to the year 2005 by a straight line projection method. In most instances, this adds approximately 10% to each link. This is still only an 18% difference between the 2005 and 20 BP traffic volumes.

We request your concurrence in utilizing the attached traffic volumes as shown in Figure 2 for use in preparing an environmental assessment for the functional replacement of the Lawrence viaduct and development of a full access Colfax/I-25 interchange.

Due to the tight time schedule on this project, if we do not hear of any serious concerns within ten working days, we will assume the volumes are acceptable for use in the above mentioned environmental assessment.

If you have any questions, please contact Jennifer Finch at 757-9372.

Very truly yours,

for W. Stinfellow
HARVEY ATCHISON, Director
Division of Transportation Planning

I concur: George Scheuernstuhl 12/18/84
GEORGE SCHEUERNSTUHL Date

HA:JF:ts

COLORADO DEPARTMENT OF HEALTH
Richard D. Lamm
Governor
Thomas M. Vernon, M.D.
Executive Director

June 4, 1986

J Piffer
cc Bracken/Tempel

Barbara L. S. Chocol
Manager
Project Development Branch
4201 East Arkansas Avenue
Denver, Colorado 80222

Dear Ms. Chocol:

The Division has received your April 29, 1986 letter concerning the Auraria Parkway. We have obtained assurance that no air pollution problems will be caused by the project, but we believe several issues should be addressed in the environmental assessment (EA).

First, recent air quality modeling shows CO levels to be much higher than the modeling results reported in your letter. If this particular project were to contribute to this air quality problem, the Division could not find it consistent with the State Implementation Plan. Your staff has assured us, however, that the project will not exacerbate the problem and that, in fact, fewer persons will be exposed to high CO levels with the rerouting of traffic. The EA needs to report all of these findings in order for a consistency determination to be made.

Second, as a result of this project, traffic will be rerouted north of Speer Boulevard and outside the official boundary of this EA. In view of the expected high levels of CO in the downtown area, we request a statement in the EA which, again, assures us that the traffic levels north of Speer will not create a worse air quality problem and/or that no more people will be exposed to high levels due to the rerouting.

With these statements in the EA, we can concur with a consistency determination.

Sincerely,

John Leary
Acting Director, APCD

JL/jb

4210 EAST 11TH AVENUE DENVER,COLORADO 80220 PHONE (303) 320-8333

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS

SPEED MEMO

MESSAGE

TO: Greg Mugele
Dist 6

DATE: 11/13/86

SUBJECT: T&E Clearance C-CC-01-0033-01
Curvaria Parkway

Per a phone conversation today (11/13/86) project C-CC-0033-01 has been verbally cleared by Mr. Bob Leachman of the U.S F.W.S Grand Junction field office.

FROM: Kris Mering

REPLY

TO:

DATE:

FROM

CDOH Form No. 1
March 1986

STATE OF COLORADO

DEPARTMENT OF HIGHWAYS

4201 East Arkansas Ave.
Denver, Colorado 80222
(303) 757-9011

July 31, 1986

Ms. Barbara Sudler
State Historic Preservation Officer
Colorado Heritage Center
1300 Broadway
Denver, CO 80222

Re: Project CC 01-0033-01, Auraria Parkway

Dear Ms. Sudler:

The Auraria Parkway project will provide a new roadway connecting I-25 to Denver's Central Business District. The need for the Auraria Parkway was established by the decision to construct a new viaduct in the Walnut Corridor to replace the deteriorating Lawrence and Larimer viaducts. The new viaduct (now called the Walnut Viaduct), will touch down between 6th and 7th Streets between Walnut and Wazee Streets. This touch-down location honors the Auraria Higher Education Center's long-established goal to move traffic from roadways inside the Auraria Campus, to the northern campus perimeter.

Based upon analysis by the City and County of Denver and their consultant, BRW, three basic alternatives were selected for detailed analysis and inclusion in an environmental assessment. The three alternatives are: the Parallel Mall, the Multiple Cross Mall and the Combined (these alternatives are described in detail further on in this letter).

The boundaries for the historical survey area basically include the Auraria Campus, Central Business District and Lower Downtown area (see enclosed survey area map). The survey area is located in Township 3 South, Range 68 West, Sections 27, 33 and 34. The total survey area includes 575 acres. The entire area has been surveyed under previous downtown and lower downtown surveys, as well as under the Colorado Department of Highways Colfax Viaduct survey for historical resources (Project FCU 040-4(6). A list of all National Register, eligible and potentially eligible sites within the survey area was obtained from the Colorado State Historic Preservation Office in March 1986 (see attached). An updated file search was conducted in July 1986 to verify the accuracy of this list. A second list was prepared which included historical sites within the potential impact area of the Auraria Parkway project (shown below).

The Colorado Department of Highways (CDOH), on behalf of the Federal Highway Administration (FHWA), has applied the Criteria of Effect pursuant to Part 800.4 of the Advisory Council on Historic Preservation's regulations. These criteria were applied to the following properties on or eligible for the National Register of Historic Places which were identified within the above undertaking's area of potential impact:

901 Wazee Street (5DV1004)
West Wazee Street Warehouse District (5DV1005)
Larimer Square (5DV104)
Denver Lower Downtown Commercial District (5DV47)
St. Elizabeth's Church (5DV128)
Auraria-9th Street Historic District (5DV102)
St. Cajetan's Church (5DV702)
Emmanuel-Shearith Israel Chapel (5DV120)
Tivoli Brewery (5DV119)
Colorado Ice and Storage Company (5DV1393)
Midwest Steel and Iron Works Company (5DV339)

Based upon information contained in the Auraria Parkway Corridor Study Report and on meetings between the Colorado Department of Highways, State Historic Preservation Office, City of Denver and Auraria, we have concluded that Project CC-01-0033-01 will have effects on some of the above mentioned properties. The effects which will result from each of the project alternatives are described below.

All Alternatives

The detailed plans for each alternative are identical from the Walnut Viaduct to approximately 11th Street, with some variation in intersection access at 11th and 12th Streets. The Parkway, from the Walnut Viaduct through 11th Street, will consist of three through lanes with right and left turn lanes in each direction separated by a median.

As the result of the detailed study of alternative parking and access schemes for the Wazee Business Area, no parking will be provided along the Parkway. Instead, a parking mall is to be constructed behind the Wazee businesses.

Intersections for each alternative from the Walnut Viaduct to 11th Street will be located at 7th and 9th Streets. An additional fully directional intersection would also occur at 11th Street under the Parallel Mall Alternative. Under the Multiple Cross Mall and Combined Alternatives, no intersection is proposed at 11th Street because the traffic on the outbound leg of the Parkway would cut across the outbound lanes from Blake Street to turn north at 11th Street, creating a dangerous traffic circulation problem.

From approximately 11th Street eastward, each of the alternatives vary considerably, with the exception of Wazee east of Speer Boulevard, which is to be two-way and connected to the Parkway via the bridge across Cherry Creek under all the alternatives. These eastern elements of each alternative are described by alternative below.

The retention of the Wazee Historic Area is highly dependent on its continued economic viability. The provision of access and parking is critical to the Area's continued viability. All alternatives provide a major parking mall to the rear of the Wazee businesses, but vary as to the number of access points. The Parallel Mall provides the greatest amount of access with three signalized fully directional intersections and a partial intersection at 12th Street. The Multiple Cross Mall and Combined Alternatives provide two signalized intersections and a right-in, right-out at 12th Street.

The visual impact of the Parkway on the Wazee Area will be softened by the retention of the existing 16-foot sidewalk and the addition of a wide landscaped area adjacent to the Parkway. Fourteen feet of the landscaped area will be permanent landscaping. An additional 12 feet of landscape area which could ultimately become a fourth Parkway lane will also be provided. A more thorough description of the landscape concept is presented in the Parkway Entrance Concept attached.

The following properties are located outside the impact area for all alternatives and, therefore, would have no effect or, in some cases, a long term beneficial effect once major traffic is removed from Lawrence and Larimer Streets between 7th and 12th Streets:

St. Elizabeth's Church (5DV128)
9th Street Historic District (5DV102)
St. Cajetan's Church (5DV702)
Emmanuel-Shearith Israel Chapel (5DV120)
Tivoli Brewery (5DV119)
Colorado Ice and Storage Company (5DV1393)
Midwest Steel and Iron Works Company (5DV339)

Conditional on the identified access points and proposed parking plan from 7th to 12th Streets, it is our opinion that any of the proposed alternatives would have no adverse effect on the following properties:

901 Wazee Street (5DV1004)
West Wazee Street Warehouse District (5DV1005)

The alternatives either match volume to capacity on Larimer Street or provides for a reduction in volume. The Multiple Cross Mall and Combined Alternatives would retain existing traffic flow patterns and associated

volumes (although somewhat reduced with the Combined Alternative). The Parallel Mall would reduce traffic flow on Larimer Street between 14th and 15th Streets. Therefore, we feel that there would be no further effect on Larimer Square (5DV104).

Parallel Mall Alternative

The Parallel Mall Alternative is identical to the Multiple Cross Mall and Combined Alternatives from the Walnut Viaduct to just west of 11th Street as shown in Figure 62. Full directional signalized intersections will be provided at 7th, 9th, and 11th and a partial intersection at 12th. At 11th, the inbound and outbound legs of the Auraria Parkway curve slightly to the southeast to connect with the existing bridges across Cherry Creek at Market and Blake Streets respectively.

Within the Downtown street grid, the inbound movement will utilize 14th Street from Market Street south, to serve the Skyline and Downtown destinations to the south, and Market Street east to separately serve the Lower Downtown Area.

Within the Downtown street grid, the outbound portions of the Parkway follow 15th Street north and turn west on Blake to the existing Blake Street bridge across Cherry Creek and the Parkway beyond.

The 15th and Blake Street intersection will require improvement to accommodate three left turn lanes. Additional right-of-way will, therefore, be required on the southwest corner of the intersection as indicated in Figure 62. This property, currently leased by EMS, may be demolished as a result of this project. However, this property is not considered eligible for the National Register. Further, the development of a major intersection at 15th and Blake will require the relocation of the 15th Street Viaduct touchdown point from its present location between Wazee and Blake, to north of Wazee Street.

The intersection at 11th Street is a signalized, fully directional intersection. At 12th Street, as under both of the other alternatives, a right-in, right-out movement from the outbound leg of the Parkway will be provided.

The Parallel Mall Alternative has the least impact of the alternatives considered and maximum opportunities for implementation of pedestrian amenities in the lower downtown area. The additional outbound traffic on 15th and Blake from 15th to 14th will adversely affect the pedestrian environment for three linear blocks. Pedestrian block face improvements are proposed on Blake between 14th and 15th and on 15th Street between Larimer and Blake. The remainder of the streets in lower downtown would have little Parkway traffic, permitting sidewalks to be widened and other

pedestrian amenities to be developed independent of the proposed actions. Based on the impacts to 15th Street and Blake Street described above, it is our opinion that the Parallel Mall Alternative will have an adverse effect on the Denver Lower Downtown Commercial District (5DV47). We also feel that this adverse effect can be mitigated with the proposed pedestrian block face improvements as listed below:

- Streetscape Improvements - special lighting and signage.
- Pedestrian Amenities - benches, trees, planters.
- Widen sidewalks where possible.

Multiple Cross Mall Alternative

The alignment for the Multiple Cross Mall Alternative departs significantly from the Parallel Mall Alternative west of 12th Street, at which point the inbound leg of the Parkway curves through the Auraria Campus to connect with Lawrence Street. Left turn access to Market Street is also provided under the existing Speer Viaduct. At 12th Street, the outbound leg of the Parkway divides into two access roads, one of which curves under the Speer Boulevard Viaduct to connect to Blake Street and the second curves to join Larimer Street. The Multiple Cross Mall Alternative provides fully directional intersection access at 7th and 9th with right-in, right-out access at 12th Street.

Within the Downtown street grid, the one-way couplets of Lawrence and Larimer Streets and Market and Blake Streets will be used to access the Skyline Area and the Downtown areas to the south, and the Lower Downtown Area respectively.

The Multiple Cross Mall Alternative is supportive of the Lower Downtown Area's plans to develop a pedestrian oriented environment. The alternative provides access to the Lower Downtown via Market and Blake Streets, but focuses traffic which is destined for other locations in Downtown Denver on Lawrence and Larimer Street.

There is, however, the potential for an adverse effect on the Denver Lower Downtown Commercial District (5DV47) due to increased traffic volumes.

Combined Alternative

The Combined Alternative combines elements of the Parallel Mall and Multiple Cross Mall Alternatives. The Combined Alternative provides fully directional intersection access at 7th and 9th with right-in, right-out access at 12th Street. The inbound legs of the Parkway are the same as those proposed under the Multiple Cross Mall Alternative, with three through inbound lanes connecting to Lawrence Street at Speer Boulevard, and two inbound through lanes connecting to Market Street.

The outbound movement under this alternative combines elements of the Parallel Mall and Multiple Cross Mall alternatives by splitting the outbound movement between Larimer Street and 15th/Blake Streets.

The balancing of outbound traffic between Larimer and 15th Streets will permit a reduction in the number of left turn lanes at 15th and Blake from three to two, thereby reducing the amount of right-of-way required at the southwest corner of the intersection. The relocation of the existing touchdown point of the 15th Street Viaduct to north of Wazee Street would be required by the improvement of the 15th and Blake intersection.

The Combined Alternative is supportive of the Lower Downtown Area's plans to develop a pedestrian oriented area. The alternative provides access to the Lower Downtown via Market and Blake Streets. Outbound Downtown traffic is balanced between Larimer Street and 15th and Blake Streets which reduces the outbound flows on 15th and Blake experienced under the Parallel Mall Alternative.

Due to the increased traffic flow and removal of some on-street parking, we feel this alternative will have an adverse effect on the Denver Lower Downtown Commercial District (5DV47).

We hereby request your concurrence with our determination of effects. Your response is necessary for the Federal Highway Administration's compliance with Section 106 of the National Historic Preservation Act and with Part 800.4 of the Advisory Council on Historic Preservation's regulations. We appreciate your prompt attention to this matter and would like to receive your concurrence within three weeks. If you need additional information, please contact CDOH historian, Rebecca Herbst at 757-9786.

Very truly yours,

Barbara Chocol, Manager
Project Development Branch

cc: Brasher
CF
OF
RF

I concur: Leslie G Wildesen for Barbara Sudler, State Historic Preservation Officer Date: 8/21/86

MEMORANDUM OF AGREEMENT

WHEREAS, the Federal Highway Administration has determined that Project CC 01-0033-01, Auraria Parkway, will have an effect upon properties included in or eligible for inclusion in the National Register of Historic Places and has requested the comments of the Advisory Council on Historic Preservation pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. 470) and its implementing regulations, "Protection of Historic and Cultural Properties" (36 CFR Part 800);

NOW, THEREFORE, the Federal Highway Administration, the Colorado State Historic Preservation Officer, and the Advisory Council on Historic Preservation 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.

1. The agency official, in cooperation with the City and County of Denver, shall ensure that access points to 901 Wazee Street and the West Wazee Street Warehouse District at 9th, 11th and 12th Streets will be maintained. In addition, a parking area shall be provided behind the aforementioned Wazee buildings to replace parking that will be removed from the existing street. The SHPO shall be afforded the opportunity to review plans when available.

2. The following improvements shall be made along the 1300 and 1400 Block of 15th Street and the 1400 Block of Blake Street within the boundaries of the Denver Lower Downtown Commercial District:

   Streetscape improvements - special lighting
   Pedestrian amenities - benches, trees and railings
   Widen sidewalks where possible

   The SHPO shall be afforded the opportunity to comment on these proposed improvements or related changes during the urban design process.

3. Failure to carry out the terms of this Agreement requires that FHWA again request the Council's comments in accordance with 36 CFR Part 800. If FHWA cannot carry out the terms of the Agreement, it will not take or sanction any action or make an irreversible commitment that would result in an adverse effect with respect to National Register or eligible properties covered by the Agreement or would foreclose the Council's considerations of modifications or alternatives that could avoid or mitigate the adverse effect on the properties until the commenting process has been completed.

4. If any signatory to this Agreement determines that the terms of the Agreement cannot be met or believes a change is necessary, that signatory will immediately request the consulting parties to consider an amendment or addendum which will be executed in the same manner as the original Agreement.

5. Within 90 days after carrying out the terms of the Agreement, FHWA shall provide a written report to all signatories to the Agreement on the actions taken to fulfill the terms of the Agreement.

Execution of this Memorandum of Agreement evidences that the Federal Highway Administration has afforded the Council a reasonable opportunity to comment on Project CC 01-0033-01, Auraria Parkway, and its effects on historic properties and that the Federal Highway Administration has taken into account the effects of its undertaking on historic properties.

Division Administrator — Date
Federal Highway Administration

Colorado State Historic Preservation Officer — Date

Executive Director — Date
Advisory Council on Historic Preservation

Chairman — Date
Advisory Council on Historic Preservation

ATTEST:

_____

FELICIA MUFTIC, Clerk and Recorder, Ex-Officio Clerk of the City and County of Denver

APPROVED AS TO FORM:

STEPHEN H. KAPLAN, Attorney for the City and County of Denver

By _____
Assistant City Attorney

ATTEST:

_____

Secretary

CITY AND COUNTY OF DENVER

By _____
Mayor

RECOMMENDED AND APPROVED:

By _____
Manager of Parks and Recreation

REGISTERED AND COUNTERSIGNED:

By _____
Auditor

STATE OF COLORADO

By _____
Robert L. Clevenger
Chief Engineer
Colorado Department of Highways

By _____
Lynn Obernyer
First Assistant Attorney General
Natural Resources Section
State of Colorado

By _____
James Stroup
State Controller
State of Colorado

APPENDIX

B

APPENDIX B

PROJECT CHRONOLOGY

1984

January 5	Meeting with Lower Downtown Property Owners Association
January 11	Meeting with Walnut/Wazee Property Owners on Colfax-Lawrence-Larimer Project
January 19	Approval of Larimer Viaduct EA by FHWA
February 14	Meeting with AHEC and C&C of Denver
February 22	Public Hearing on the Larimer EA
February 28	Meeting with RTD and C&C of Denver
March 6	Meeting with SHPO
March 16	Meeting with AHEC
March 27	Meeting with local businesses in Walnut/Wazee vicinity
July 19	Approval of Larimer Viaduct FONSI by FHWA
August	Construction of Colfax Viaduct completed

1985

March 4	Approval of Lawrence Viaduct EA
August 28	Initial Meeting of the Public Agency Coordinating Committee (PACC)
August 29	Meeting with AHEC and CDOH
September 5	Meeting with RTD
September 17	Meeting with Larimer Square Associates
September 25	PACC Meeting
September 26	Meeting with Tivoli Denver
October 2	Meeting with The Denver Partnership
October 14	Meeting with the C&C Denver Access Sub-Committee on the Downtown Area Plan
October 30	PACC Meeting
November 5	Meeting with the Access Sub-Committee
November 8	Mailing of 1st Project Newsletter
November 15	Meeting with the Access Sub-Committee
November 19	1st Public Information Meeting
November 20	Meeting with Tivoli Denver
December 4	Meeting with the Tabor Center
December 4	PACC Meeting

1986

January 10	Meeting with Historic Denver, Inc.
January 15	PACC Meeting
January 21	Meeting with CDOH, AHEC and C&C of Denver regarding funding
January 22	Mailing of 2nd Newsletter
February 5	Meeting with the Lower Downtown Property Owners Association
February 10	Work Session with Lower Wazee Property Owners
February 12	Work Session with Lower Downtown Property Owners
February 12	PACC Meeting

February 13	Mailing of 3rd Newsletter
February 18	Meeting with Larimer Square Associates
February 19	2nd Public Information Meeting
February 20	Meeting with the Tabor Center
February 26	Work Session with the Denver Partnership
March 5	PACC Meeting
March 6	Presentation to Denver Civic Ventures Board
March 11	Meeting with Lower Downtown Plan Committee and Denver Landmark Commission
March 12	Presentation to Denver AIA Urban Design Committee
March 12	Meeting with RTD
March 13	Meeting with Tabor Center
March 20	Presentation to Mayor Pena and Staff
March 31	PACC Meeting
April 2	Denver Planning Board's Public Hearing on the Auraria Parkway Project
April 18	Mailing of 4th Newsletter
May 6	3rd Public Information Meeting
May 14	Meeting with local businesses in Walnut/Wazee vicinity
June 2	Denver Planning Board votes to support Parallel Mall Alternative

APPENDIX

C

APPENDIX C

List of Agencies, Organizations, and Officials to whom copies of this EA or notice of availability will be sent:

State

Colorado Department of Health
State Historic Preservation Office
State Clearinghouse

Local

Denver Regional Council of Governments
The Denver Partnership
Denver Urban Renewal Authority
Larimer Square Associates
Regional Transportation District
Urban Drainage and Flood Control

There are also several individuals on the project mailing list that will be sent notices of availability of the Environmental Assessment and notices on the public hearing.