FEDERAL BOULEVARD

CORRIDOR PLAN

Prepared for:
City and County of Denver
Department of Public Works
Transportation Division
200 West 14th Avenue
Denver, CO 80204

Prepared by:
Felsburg Holt & Ullevig
5299 DTC Boulevard, Suite 400
Englewood, CO 80111
303/721-1440

In association with:
EDAW/HRV, Inc.
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February, 1995
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Ameridan Bridal Gown Co.
Barnum Publishing Co.
Business Equipment
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Chinese News
DuPriest Typewriter Co.
Federal Ace Hardware
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Federal Jewelry and Loan
First Nat'l Bank of Denver
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Jennifer Finch  Colorado Department of Transportation
Steve Rudy  Denver Regional Council of Governments
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City and County of Denver
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EXECUTIVE SUMMARY

GOALS OF THE FEDERAL BOULEVARD CORRIDOR PLAN

The Federal Boulevard Corridor Study was initiated in order to achieve three primary goals:

- Enhance the Image of Federal Boulevard for Both Residents and Visitors
- Improve the Safety and Operating Efficiency of the Corridor for Pedestrians and Vehicles
- Limit Land Acquisition to the Minimum Needed to Improve the Image and Safety of the Corridor

These goals were identified as a direct result of the technical analysis which documented the following issues and problems along Federal Boulevard.

SUMMARY OF PROBLEMS

IMAGE AND CHARACTER

Historically, Federal Boulevard was a pleasant, tree-lined street from the Barnum neighborhood in the south to the Regis area in the north. Commercial uses in the south segment transitioned to a lush residential district north of 20th. Street car lines serving northwest Denver crossed Federal at five locations north of Colfax with local neighborhood serving shops at several intersections. The street cars actually ran on Federal between Colfax and Alameda. Over the years trees and tree lawns have been lost to road widenings. Sidewalks and landscaping have been neglected or paved over in many locations. In some areas retail and commercial uses have expanded from their original neighborhood oriented intersections and without benefit of street trees, landscaping, and other amenities now threaten the quality and character of the residential districts which share the corridor.

As a result much of the corridor presents an image that is ill-defined or worse. Indistinct commercial edges pose potential threats to the integrity of the nineteen neighborhoods adjacent to Federal, and the deteriorating public edge of the boulevard provides an environment which is adverse to the pedestrians as well as unattractive to motorists.

SAFETY DEFICIENCIES

An analysis of more than 10 years of data indicates that Federal Boulevard is one of the most hazardous corridors in Denver for both pedestrians and vehicles. Some significant statistics include:

- The fatalities along Federal Boulevard have averaged more than 3 deaths per year for the last 10 years with more than 3/4 of these involving pedestrians or bikers.
Federal Boulevard ranks highest in terms of pedestrian and bicycle fatalities in the City and, accounts for approximately 20% of the pedestrian fatalities in all of Denver.

The intersections of Alameda and Evans with Federal Boulevard have ranked at or near the top of the list of intersections in the City relative to annual accidents for several years.

**NARROW RIGHT-OF-WAY**

The existing publicly owned right-of-way along Federal Boulevard is very narrow. While much of the Federal Boulevard right-of-way is 100 feet wide, there are significant lengths of the corridor having only 90 feet or 80 feet of width. Historically, the City has attempted to make improvements to Federal Boulevard (south of Colfax Avenue) within a proposed right-of-way width of 120 feet. This would require that all of the approximately 575 parcels along the corridor south of Colfax would lose a minimum of 10-feet of property and in some instances as much as 20-feet. This situation has proved to be untenable for many property owners and, as a result, few improvements of significance have been made to the image and safety of the corridor.

**SUMMARY OF RECOMMENDATIONS (Figure S1 and Figure S2)**

**IMAGE ENHANCEMENTS**

The preliminary recommendations to enhance the image of Federal Boulevard include several approaches which recognize the unique characteristics of different segments of the corridor. Major enhancements include:

- Provide a planted median in the middle of Federal Boulevard of approximately 9 to 10 feet in width. In the north segment of the corridor between I-70 and 20th Avenue existing on-street parking would have to be relocated in order to provide room for the median. Off street parking solutions are preferred, however pullouts may be necessary where other residential parking options do not exist.
- Development of consistent streetscape improvements along the edges of the corridor including landscaping, street trees, lighting, and street furniture. These improvements to be implemented through new development, redevelopment and the establishment of maintenance districts.

- Provide continuous sidewalks and pedestrian amenities associated with major activity centers, bus stops, and open spaces.

- Protect and enhance adjacent neighborhoods by recognizing neighborhood gateways and boundaries and limiting the encroachment of non-residential uses. Overlay districts should be considered to implement design standards for site development and buffering between commercial and residential use zones.

SAFETY/TRAFFIC FLOW IMPROVEMENTS

The preliminary recommendations to correct the safety problems along the corridor include:

- Provide a median in the middle of Federal Boulevard which restricts turning movements at minor cross streets and driveways to right-in/right-out turns.

- Provide pedestrian crossing points across the median which connect major activity areas or where pedestrian volumes are significant.
Federal Boulevard Corridor Plan

- Provide standard lane widths of 11 feet and relocate on-street parking to reduce side conflicts between vehicles and pedestrians and to improve bus travel along the curb.

- Add one new lane on Federal Boulevard between Colfax Avenue and Jewell Avenue. This will result in a third lane in each direction to be used primarily by right turning vehicles and buses.

- Safety improvements are required at the following intersections with Federal Boulevard:
  - Alameda Avenue - Major Reconstruction
  - 38th Avenue - Minor Traffic Control Changes
  - Speer Boulevard - Additional Turn Lanes
  - Evans Avenue - Bus Stop Improvements

LIMIT LAND ACQUISITION

The preliminary recommendation to enhance the image of the corridor and to correct the safety problems is proposed to be done within a total right-of-way width of 100 feet rather than the previous recommendation of 120 feet. Therefore, only those segments of Federal Boulevard having 80-feet or 90-feet of right-of-way will require 10-feet of land acquisition. Areas where land acquisition will be required are between Colfax and Alameda Avenue and along a short segment just south of Tennessee.
**IMPLEMENTATION PHASING**

A potential implementation phasing of the recommended improvements to the Federal Boulevard corridor along with their planning level cost estimates are shown in the following tabulation.

**TABLE S-1**

**FEDERAL BOULEVARD PLANNING LEVEL COST ESTIMATES**
(Values are in 1,000's of 1993 Dollars)

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<th>Time Frame</th>
<th>Location</th>
<th>Construction Element</th>
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<tr>
<td>1 to 5 Years</td>
<td>Federal/Alameda Intersection</td>
<td>-</td>
</tr>
<tr>
<td>1 to 5 Years</td>
<td>Federal Intersections at 38th, Speer &amp; Evans</td>
<td>-</td>
</tr>
<tr>
<td>1 to 5 Years</td>
<td>I-70 to 20th Avenue</td>
<td>1,140</td>
</tr>
<tr>
<td>1 to 5 Years</td>
<td>20th Avenue to Colfax</td>
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<tr>
<td>3 to 10 Years</td>
<td>6th Avenue to Alameda</td>
<td>420</td>
</tr>
<tr>
<td>3 to 10 Years</td>
<td>Alameda to Mississippi</td>
<td>420</td>
</tr>
<tr>
<td>10 to 20 Years</td>
<td>52nd Avenue to I-70</td>
<td>170</td>
</tr>
<tr>
<td>10 to 20 Years</td>
<td>20th Avenue to Colfax</td>
<td>200</td>
</tr>
<tr>
<td>10 to 20 Years</td>
<td>Colfax to 6th Avenue</td>
<td>420</td>
</tr>
<tr>
<td>10 to 20 Years</td>
<td>Mississippi to Jewell</td>
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<td>Corridor Totals</td>
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* The Federal/Alameda intersection improvements are contained within a larger project along Alameda Avenue extending from Knox Court to Decatur Street at a total cost of approximately $7.5 million.
I. INTRODUCTION

STUDY AREA

The Federal Boulevard corridor study area, shown in Figure 1, encompasses that portion of Federal Boulevard extending from the north limits of the City and County of Denver to Evans Avenue. Approximately 8 miles in length, the study area includes the existing right-of-way and adjacent properties and exhibits a wide diversity of land uses and transportation characteristics.

Land uses in the corridor vary significantly. While much of the south portion of the corridor is predominantly commercial with pockets of residential, institutional and park uses, there are significant concentrations of residential, educational, and park uses in the north. In addition, some economic redevelopment and urban design improvements have occurred along various segments of Federal Boulevard. Efforts are ongoing to revitalize existing local commercial areas and to enhance the overall image and character of the corridor.

The sports complex, located between 20th Avenue and Colfax represents an especially unique land use. Current unsightly conditions along Federal Boulevard adjacent to the sports complex are not appropriate to the stature of these facilities as a regional destination and a focus of civic pride. Special design treatments are required to accommodate major events as well as to provide for appropriate transition to nearby residential neighborhoods. The sports complex is considered to be a part of the northwest Denver community and as such the improvement and consistency of the boulevard image through the sports complex district is a critical issue. A subsequent and more detailed study of the sports complex district is recommended to allow for thorough consideration of its functional and aesthetic needs.

Figure 1
Corridor Study Area
The roadway element of the Federal Boulevard corridor is typically 4 through lanes north of 20th Avenue and south of Jewell Avenue and 5 through lanes between 20th Avenue and Jewell Avenue with major intersections controlled by traffic signals. Federal Boulevard is a State Highway under the jurisdiction of the Colorado Department of Transportation and is currently designated as US 287 north of Colfax Avenue and SH 88 south of Colfax. Federal Boulevard has grade separated interchanges at five major regional freeways including US 36, I-76, I-70, US 6, and US 285 (Hampden Avenue) as well as at Colfax Avenue.

**STUDY PURPOSE**

The existing characteristics of the Federal Boulevard corridor as described in the foregoing make the corridor particularly sensitive to continuing redevelopment efforts and growth in regional travel demand. Preservation of the viable residential neighborhoods and commercial areas along the corridor has been a continuing objective which has been hindered as land use changes have slowly evolved over the last several decades. The purpose of the Federal Boulevard Corridor Study, therefore, is to:

- Define recommended improvements within the public right-of-way for incorporation into future construction projects including landscaping, pedestrian, and roadway improvements.

- Establish development guidelines for properties adjacent to the public right-of-way to insure that redevelopment projects are consistent with the desired image and character of the corridor.

This report documents the technical analysis and citizen participation process which resulted in the recommended Federal Boulevard Corridor Plan (Chapter V) and the Implementation Process (Chapter VI).

**HISTORICAL OVERVIEW**

Federal Boulevard is an officially designated boulevard by Denver ordinance as part of the city’s park and parkway plan. Despite this designation it has never entirely met the city’s definition of a parkway as stated in the Comprehensive Plan, which would require the inclusion of a planted median and a limitation of commercial development. Federal has always been a major transportation corridor through the near west neighborhoods and has long included areas zoned to accommodate both regional and locally oriented businesses, particularly in the south. It was at one time, however, a more attractive tree lined thoroughfare throughout its length, a condition which remains only in the northern residential sections. Years of widenings and neglect have defeated any resemblance to a boulevard in most of the commercial areas. Federal’s travel demands and designation as a state highway have combined to necessitate widening of the roadway.
REGIONAL TRANSPORTATION PLANS

The Denver Regional Council of Governments (DRCOG) Regional Transportation Plan is a regional plan which identifies future transportation needs in terms of general laneage requirements and accesses. The regional transportation plan for 2010 identified Federal Boulevard as a principal arterial and indicated that the corridor should consist of 4 basic through lanes from the north city limits to approximately 20th Avenue, 5 through lanes from 20th Avenue to Alameda Avenue, and 6 through lanes from Alameda Avenue south to Evans Avenue and beyond.

These laneage requirements, which reflect City input, have generated both technical and social concerns. The section of Federal Boulevard between Colfax and Alameda has historically exhibited traffic volumes higher than the segment south of Alameda which would suggest that, on a technical basis, a 5-lane segment is not sufficient to accommodate future traffic volumes. South of Alameda, where 6-lanes are proposed, there is the concern that additional right-of-way acquisition would result in adverse social and economic impacts.

The recently adopted 2015 Interim Regional Transportation Plan, which reflects only regional improvements affordable under a fiscally constrained scenario, calls for the widening of Federal Boulevard to six through lanes from 6th Avenue to Jewell Avenue. Despite travel demands that justify six lanes, impacts on adjacent properties and fiscal constraints were major factors in retaining a 5-lane segment between Colfax and 6th Avenue in the 2015 plan.

CURRENT DENVER PRACTICES

Between Colfax Avenue and Jewell Avenue, the City and County of Denver has been requiring new developments and redevelopment projects along Federal Boulevard to provide additional right-of-way sufficient to expand the existing right-of-way to be a total width of 120-feet. The purpose of this requirement is to provide sufficient room for an eventual upgrading of the corridor as represented by the typical cross-section shown in Figure 2.

Much of Federal Boulevard between Colfax and Jewell has an existing right-of-way of approximately 100-feet. However, a significant portion of the corridor (primarily between Colfax and Alameda) has an existing right-of-way of 90-feet with some areas having as little as 80-feet of existing right-of-way. Thus, depending upon specific location, 10-feet to 20-feet of additional land would be required from adjacent properties to achieve a total right-of-way width of 120-feet. The acquisition of an additional 10 to 20 feet of right-of-way has generated concerns from adjacent property owners and businesses operators as to the continuing and long-term viability of their operations. In addition, while the current Denver practice is consistent with the 2010 Regional Transportation Plan south of Alameda Avenue, it is not consistent between Colfax and Alameda. Additional information is presented in the Appendix regarding current City practices relating to land dedication and related matters.
SOUTHWEST QUADRANT TRANSPORTATION STUDY

In response to the concerns expressed above as well as other transportation issues affecting the greater southwest quadrant of the City, the City and County of Denver prepared a long-range transportation study for the area lying west of Broadway and south of Colfax in 1991. This study, while necessarily more general and comprehensive than a study of a specific corridor, did identify Federal Boulevard as a key "issue corridor". Among the recommendations included in the Southwest Quadrant Transportation Study were several which related to Federal Boulevard:

- More detailed studies should be done to determine realistic future travel demands in the corridor and their associated roadway and laneage requirements.
- The consequences of right-of-way acquisition should be evaluated in greater detail to determine the impacts on existing businesses and their long term viability.
- The corridor should also be evaluated in terms of urban design, neighborhood compatibility, and pedestrian scale needs.

As a result of these findings and recommendations, the City and County of Denver initiated this Federal Boulevard Corridor Study. The elements of this study include the travel demand, land use, right-of-way needs, and urban design elements described above. In addition, upon completion of the Federal Boulevard Corridor Plan, the City will have the basis to provide input to the DRCOG 2020 Regional Transportation Plan and to amend the City’s Comprehensive Plan.
STUDY ORGANIZATION

CITIZENS ADVISORY COMMITTEE

Early in the study process, a Citizens Advisory Committee (CAC) was organized to discuss the purpose of the study, overall work activities, and general schedule. Additionally, because the corridor is several miles long and the characteristics of the corridor are very different between the north half and the south half of the corridor, the Citizens Advisory Committee decided to form two subcommittees.

The north segment was defined to extend from the north City limits to Colfax Avenue while the south segment was defined to extend from Colfax Avenue to Evans Avenue. Each subcommittee met approximately five times to discuss work status and evaluate alternatives applicable to the specific needs of each segment.

TECHNICAL ADVISORY COMMITTEE

A Technical Advisory Committee (TAC) was also organized and consisted of representatives from various city departments and other governmental agencies. The purpose of the TAC, which met on a periodic basis in parallel with the citizen subcommittees, was to review the various alternatives from a technical perspective and relative to the plans of other agencies. Comments of the TAC were submitted to the citizen committees for inclusion in their discussions.

PUBLIC WORKSHOPS

Two public workshops were held at the conclusion of the citizen subcommittee meetings to coordinate the preliminary recommendations for the north and south segments of the corridor and to present the draft plan to the general public. One workshop was held in the north segment of the corridor and one in the south segment.

The composite input of the CAC, TAC, and public workshops together with the technical analysis resulted in the Federal Boulevard Corridor Plan as documented in the following sections of this report.
II. ANALYSIS OF EXISTING AND FUTURE CONDITIONS

In order to assess the overall improvement needs within the Federal Boulevard corridor, data pertaining to land uses, urban design, safety and transportation were compiled. These items were analyzed and evaluated to identify major problems and key issues. The results of these analyses are summarized in the following.

URBAN DESIGN

CHARACTER

Historically, Federal Boulevard was a pleasant, tree-lined street. Southern segments of Federal Boulevard have long included a mix of residential and business uses although the business zoning along that part of the corridor dates to Denver’s original zoning ordinance in 1925. The segment of Federal north of 20th is largely residential in character with smaller scale neighborhood oriented retail shops at several intersections where the street car lines that served the northwest Denver neighborhoods crossed the boulevard. In fact, the Federal Boulevard corridor forms an edge to nineteen different neighborhoods between Evans and the north city limit.

The original tree lined character currently remains intact only in limited residential segments of the north corridor, roughly between 23rd Avenue and 46th Avenue. Remnants of the old character, however, may still be found throughout the corridor in the form of detached sidewalks and a few landscaped tree lawns. Most tree lawn areas in commercial zones have either been lost to street widening, paved over or do not have any maintained landscaping.

Several parks and landmark quality buildings along with two historic districts reflect the historic past in the north segment of the corridor. Much of the north section is edged with more traditional commercial buildings fronting directly at the edge of the street right-of-way and residential areas with well maintained landscaping including street trees. This results in a fairly narrow and consistent visual corridor typical of Denver’s traditional urban streets.

The south segment of the corridor is dominated by retail and commercial uses in single story buildings without benefit of street trees or other landscaping with few exceptions. Contemporary retail development has preferred to pull buildings away from the street to allow parking access in front. The lack of building frontage on the street and the multiplicity of curb cuts has added to the destruction of landscaping caused by road widening. In a few older commercial sections where the right-of-way is very narrow road widening has not left adequate room for detached walks or landscaping. These conditions have resulted in an inconsistent and ill-defined streetscape typical of strip commercial development.
The continuity of the Boulevard is destroyed by the large freeway style interchanges at West 6th Avenue and West Colfax Avenue. The existing sports, recreational and park uses are appropriate adjacent to these interchanges where small scale business or residential developments might have difficulty coexisting with the scale of the roadways. Large commercial and industrial developments that turn their backs to these interchanges are unsightly and would benefit from landscape screening. These interchanges now also provide points of visual relief and view opportunities albeit at significant cost to the quality and continuity of the surrounding community.

Federal Boulevard’s location on the western bluffs of the Platte Valley does in fact provide several locations that offer good views of the valley and the downtown Denver skyline. This occurs at Speer Boulevard as well as 6th Avenue and Colfax. On a clear day, southbound motorists near Mississippi and Alameda Avenue can view Pikes Peak, 60 miles to the south.

Many designated bike routes cross the Boulevard offering access to the Platte River Greenway, natural gulch areas and neighborhoods. These occur at 46th Avenue, 35th Avenue, 23rd Avenue, 17th Avenue, Lakewood Gulch, 10th Avenue, 8th Avenue, 1st Avenue, Louisiana Avenue and Sanderson Gulch. Off-street bike routes following natural gulches provide a recreational feature unique to the west side neighborhoods.

LAND USE

Federal Boulevard currently functions as one of five major north/south travel corridors through Denver with abutting land uses that change in both character and in scale. Within the 8 miles of Federal Boulevard that is part of this plan’s study area the following conditions are typical:

- Federal Boulevard from Evans to Mississippi contains lots with substantial depth. Land uses are primarily commercial and were built in the 1950s and 1960s with substantial off-street parking in front. The road right-of-way along this segment is 100 feet. Relatively deep commercial lots in this area allow for adequate streetscape and parking lot landscaping as is witnessed by the attractive planting and maintenance of developments such as the Brentwood Shopping Center.

- From Mississippi north to Alameda a mixture of dated primarily free-standing commercial structures and single-family houses exist. Many residential structures predate Denver’s zoning ordinances and have been converted to commercial use. The road right-of-way along this segment is 100 feet, with one exception. Much of the streetscape in this segment has been neglected and in some cases the public right-of-way is actually being used for parking and other private uses. However, the detached sidewalks predominate indicating the previous existence of landscaped tree lawns.
The portion between Alameda and Colfax also contains a mixture of dated commercial structures and single-family houses, half of which have been converted to commercial use. The road right-of-way in this segment is 80 to 90 feet and has a more urban and dated character than segments further south and further north. This segment was initially developed at an earlier date than areas to the south and therefore contains a greater percentage of older commercial structures close to the street and residences that predate zoning. These conditions along with the narrow street right-of-way have been a deterrent to the type of redevelopment that has occurred further south, while the mix of uses has not fostered the relative stability of primarily residential districts to the north. The streetscape along the corridor segment between 5th Avenue and Colfax consists almost entirely of attached sidewalks with no additional landscaping. New as well as old structures crowd the street.

The segment between Colfax Avenue and West 20th Avenue has a distinct regional character, since it is dominated by Mile High Stadium and McNichols Arena. However, the stadium and arena currently have very little positive presence on the Boulevard and the general character of the streetscape and much of the private development in this strip is unsightly and not in keeping with the prominence and civic nature of these uses. Land uses in this area are subject to redevelopment pressures and opportunities. Several new chain food franchise developments have made landscape improvements to their properties.

The segment between West 20th and West 29th Avenues has a mixed residential/commercial character with the most significant retail presence being the Safeway MarketPlace at West 26th Avenue. Incremental rezoning from residential to commercial uses has occurred in the area of 20th to 23rd Streets over the past 35 years. Streetscape conditions vary but the dramatic transition to the tree lined boulevard character of northwest Denver is evident.

The importance of the Federal Boulevard/Speer Boulevard intersection as a landmark location has been greatly enhanced by the creation of Viking Park in the triangle formed with 29th Street. Views to North High School, St. Dominics and the downtown skyline have been opened up dramatically. It has become the symbolic gateway to the northwest Denver neighborhoods due to the lack of attractive streetscape further south on Speer. This intersection will continue to present opportunities to amplify this landmark quality and new development should carefully consider its visual as well as functional impact on the civic character that has been established. The Speer Corridor Design Guidelines (1991) and the North Speer Boulevard Revitalization Master Plan (1987) provide more specific guidance to the design issues at this intersection.
There are two dated but not blighted community scale business areas at West 38th and West 44th Avenues. These commercial nodes date to the period when street cars crossed Federal at these locations. The condition of commercial area streetscaping varies but is typically deteriorated through loss of trees, tree lawns, pedestrian lighting and other amenities. In some instances private uses such as parking are occurring on the public right-of-way. The stable configuration of roadway width and numerous existing traditional commercial buildings will aid in the restoration of an attractive streetscape in these areas. However, many older structures that have been converted or adapted to new office and retail uses are most problematic in that wide curb cuts and paving to provide parking in the former front yards have destroyed all remnants of streetscape and landscape. Newer retail site configurations have occasionally been more successful at restoring landscaping to the street edge, however the traditional relationship of buildings and landscaping to the Boulevard is lost due to numerous curb cuts and front oriented parking.

Properties between Speer and West 38th Avenue, between West 38th and 44th Avenues, and between West 44th Avenue and I-70 have a strong residential character with some prominent churches and schools. Small commercial uses occur at many intersections. Streetscape quality in residential, park and institutional areas has generally been well preserved with both attached and detached sidewalks and consistent landscaping. In some locations attached walks are wide enough to add street trees in grates. Other areas, including residential sections north of 44th would require relocating the attached sidewalk in order to create the standard tree lawn configuration. Steep front lawn slopes would make this difficult and extremely disruptive to what is otherwise an attractive streetscape.

Land uses immediately south and north of I-70 are primarily stable retail and service oriented businesses oriented to the freeway traffic. The traditional streetscape character of northwest Denver was disrupted in much of this vicinity by the intrusion of the freeway through what was previously a residential area and parochial school. However, many sections of detached sidewalks exist which would make restoration of the tree lawn and street trees relatively easy.

At 52nd Avenue, the northern Denver City limit, is Regis Square, a suburban style community scale shopping center of 17 acres anchored by a K-Mart store. Again, traditional streetscaping was lost when the freeway transformed the area from a residential zone. Regis Square is ripe for redevelopment.
MARKET CHARACTERISTICS

POTENTIAL MARKET PRESSURES

Most parcels north of Mississippi Avenue are shallow and narrow. Their size constrains their redevelopment potential since private developers are rarely willing to assemble land. Possible exceptions include Regis Square Shopping Center, the abandoned U.S. Post Office site, several school sites, and segments between West Colfax Avenue and West 20th Avenue.

Office users and providers of business and personal services are moving into single-family houses. This trend is already prevalent in the southern segment of Federal Boulevard. Most single-family houses are zoned B-4, which allow nonresidential uses. The northern segment of Federal Boulevard has a higher proportion of owner-occupied single-family houses and houses in residential use. Proactive efforts have been identified by the citizens committees to retain single family structures in residential use. These elements are documented in the recommended corridor plan.

There is a trend towards unattractive retail uses around McNichols Arena and Mile High Stadium. There would be substantial market pressure should the Broncos or Nuggets vacate their venues.

NEIGHBORHOOD RETAIL NEEDS AND FEDERAL BOULEVARD USES

The primary market area is defined as households located east of Sheridan Boulevard, west of the Platte River from Hampden north to the City limit. The market area includes these neighborhoods: Harvey Park, College View, South Platte, MarLee, Ruby Hill, Westwood, Athmar Park, Barnum West, Barnum, Valverde, Villa Park, West Colfax, Sun Valley, Sloan Lake, Jefferson Park, West Highland, Highland, Berkeley, Sunnyside, Regis, and Chaffee Park.

This primary market area contains approximately 53,945 households, which is about one-fourth of all Denver households. In 1989, households in the primary market area earned a median household income of $21,768 which is 82 percent of the City of Denver median of $26,477.

Households in the market area spend about $557 million annually on retail goods and services. These purchases might occur in the neighborhood, elsewhere in Denver or the State, on vacation, while traveling, or through mail order. This volume of purchases equates to about 2.2 million square feet of retail demand [assuming $250 retail sales per square foot] which is equivalent in size to two regional shopping centers.

Some businesses, such as the grocery and liquor stores, bars, and beauty salons, serve the neighborhood or primary market area; other businesses, such as the used car dealers and automotive repair shops, serve the southwest quadrant of the metropolitan area; others, such as the convenience/gas stations or "g-stores" and national chain fast food restaurants, serve the travelers along Federal Boulevard.
PARCELS WHICH ABUT FEDERAL BOULEVARD

There are approximately 989 parcels of land which abut Federal Boulevard between Evans and the northern City limit at West 52nd Avenue; 42 percent of these are north of Colfax Avenue and 58 are south of Colfax Avenue.

As shown in Table 1, approximately 229 (23%) of the parcels which abut Federal Boulevard are single-family houses. Within the segment south of Colfax Avenue, only 57 parcels (10%) are single-family houses; among these, approximately 26 (45%) are owner-occupied. Within the segment north of Colfax Avenue, 172 (41%) of the parcels are single-family houses; among these about 130 (76%) are owner-occupied.

TABLE 1
PARCELS WHICH ABUT FEDERAL BOULEVARD

<table>
<thead>
<tr>
<th>Type of Parcel</th>
<th>Number of Parcels on Federal Boulevard, South of Colfax Avenue</th>
<th>Number of Parcels on Federal Boulevard, North of Colfax Avenue</th>
<th>Total Number of Parcels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>57</td>
<td>172</td>
<td>229</td>
</tr>
<tr>
<td>Vacant &amp; Nonresidential</td>
<td>517</td>
<td>243</td>
<td>760</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>574</strong></td>
<td><strong>415</strong></td>
<td><strong>989</strong></td>
</tr>
</tbody>
</table>

Source: Denver Tax Assessor’s Files

ZONING ALONG FEDERAL BOULEVARD

Property which abuts Federal Boulevard is zoned B-4, B-3, B-2, I-1, R-5, R-4, R-3, R-2A, R-2 and R-1. Figure 3 schematically depicts the major zoning categories along Federal Boulevard. Zoning of properties where the Federal Boulevard right-of-way is only 80 to 90 feet includes B-4, I-1, O-1, R-3 and R-2. These areas are of particular significance because additional right-of-way may be required in these areas in the south segment of the corridor. The nature of these zone districts are summarized in the following.

B-4, General Business Zone; allows building construction up to a floor area ratio of 2. For retail uses, off-street parking is required at 1 space per 200 square feet; for office uses, off-street parking is required at 1 space per 500 square feet; for residential units, 1 parking space per unit. There are bulk limits for buildings if they abut property zoned R-0, R-1, or R-2. (Most single-family homes along Federal Boulevard are zoned B-4).

I-1, General Industrial Zone; allows building construction up to a floor area ratio of 2. The off-street parking requirements outlined in B-4 also apply here. The front setback must be 20 feet; the side setback must be 10 feet if the property abuts a parcel zoned for residential use.
O-1 is used for open space and community facilities. The front, rear and side setback requirements are 20 feet. Only City of Denver parcels are zoned O-1.

R-2 requires a front setback of 20 feet, a rear setback of 5 to 20 feet, and a side setback of 3 to 10 feet. Home-based occupations are allowed within this zone category.

R-3 is one of the multi-family residential zones which may include single-family or multi-family housing, some community services, nursing homes, small retail food markets, and home occupation uses.

BUSINESSES WHICH ABUT FEDERAL BOULEVARD

There are approximately 670 businesses within the Federal Boulevard corridor from Evans to West 52nd Avenue. Among these, 70 percent are south of Colfax Avenue where businesses comprise the substantial portion of properties abutting Federal Boulevard. Approximately 30 percent of the businesses are north of Colfax Avenue where residential uses abut a significant proportion of the Federal Boulevard frontage.
As described in Table 2, about 40 percent [267] of the businesses are engaged in retail trade and 36 percent [241] of the businesses are engaged in the provision of personal or business services. There are 114 businesses engaged in automobile sales or service and 83 establishments functioning as restaurants and bars. Due to zoning and small lot sizes, there are relatively few businesses engaged in any type of industrial activity.

The southern segment has a substantially lower proportion of businesses engaged in finance, insurance and real estate; a substantially higher proportion of businesses engaged in construction, manufacturing and wholesale trade; and a similar proportion of businesses engaged in retail trade; and in the provision of services.

**TABLE 2**

**TYPES OF BUSINESSES IN THE FEDERAL BOULEVARD CORRIDOR**

<table>
<thead>
<tr>
<th>SIC Division</th>
<th>Type of Business</th>
<th>South of Colfax</th>
<th>North of Colfax</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: 111-971</td>
<td>Agriculture, Forestry, Fishing</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>B: 1011-1499</td>
<td>Mining</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>C: 1521-1799</td>
<td>Construction</td>
<td>12</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>D: 2011-3999</td>
<td>Manufacturing</td>
<td>13</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>E: 4011-4971</td>
<td>Transportation &amp; Utilities</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>F: 5011-5199</td>
<td>Wholesale Trade</td>
<td>14</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>G: 5211-5999</td>
<td>Retail Trade</td>
<td>183</td>
<td>84</td>
<td>267</td>
</tr>
<tr>
<td>H: 6011-6799</td>
<td>Finance, Insurance, Real Estate</td>
<td>51</td>
<td>46</td>
<td>97</td>
</tr>
<tr>
<td>I: 7011-8999</td>
<td>Services</td>
<td>182</td>
<td>59</td>
<td>241</td>
</tr>
<tr>
<td>J: 9111-9721</td>
<td>Public Administration</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>K: 9999</td>
<td>Non-Classifiable</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>468</td>
<td>202</td>
<td>670</td>
</tr>
</tbody>
</table>

Source: Denver Tax Assessor files; Coley/Forrest, Inc.
Table 3 presents a more detailed breakdown of businesses engaged in retail trade.

- It will be noted that 83 businesses [31%] are either restaurants or bars and 48 businesses [18%] are engaged in the sale of automobiles, automobile parts or gasoline.
- Nearly all of the automobile sales and automobile part sales occur south of Colfax Avenue.

**TABLE 3**

RETAIL BUSINESSES IN THE FEDERAL BOULEVARD CORRIDOR
(SIC 5211 - 5999)

<table>
<thead>
<tr>
<th>SIC Code</th>
<th>Type of Business</th>
<th>South of Colfax</th>
<th>North of Colfax</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>5511-21</td>
<td>Auto Sales</td>
<td>13</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>5531</td>
<td>Auto Parts</td>
<td>9</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>5541</td>
<td>Gasoline Stations</td>
<td>11</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>5411-99</td>
<td>Grocery, Deli, &amp; Bakery</td>
<td>22</td>
<td>11</td>
<td>33</td>
</tr>
<tr>
<td>5921</td>
<td>Liquor Stores</td>
<td>10</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>5812</td>
<td>Restaurants</td>
<td>45</td>
<td>26</td>
<td>71</td>
</tr>
<tr>
<td>5813</td>
<td>Bars</td>
<td>8</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>65</td>
<td>24</td>
<td>89</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>183</strong></td>
<td><strong>84</strong></td>
<td><strong>267</strong></td>
</tr>
</tbody>
</table>

Source: Denver Tax Assessor files; Coley/Forrest, Inc.
Table 4 provides a more detailed description of the businesses engaged in the provision of services.

- Forty-eight of the services providers provide some form of medical service; 75 percent of these are in the southern segment of Federal Boulevard.
- Thirty-three businesses [14%] perform automotive repair.
- There are 19 churches or civic association offices or clubs.
- The "other" service providers [106] provide a wide range of personal services, professional services, repair services, and governmental services. A significant portion of the repair and professional service providers work from buildings which were formerly single-family homes, which were built primarily in the 1940s.

**TABLE 4**

**SERVICE BUSINESSES IN THE FEDERAL BOULEVARD CORRIDOR**

(SIC Codes 7011 - 8999)

<table>
<thead>
<tr>
<th>SIC Code</th>
<th>Type of Business</th>
<th>South of Colfax</th>
<th>North of Colfax</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7011</td>
<td>Lodging</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7211-19</td>
<td>Laundry</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>7231-41</td>
<td>Beauty/Barber</td>
<td>21</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>7532-39</td>
<td>Auto Repair</td>
<td>32</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>8011-8111</td>
<td>Medical Services</td>
<td>36</td>
<td>12</td>
<td>48</td>
</tr>
<tr>
<td>8611-99</td>
<td>Churches/Civic</td>
<td>11</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>78</td>
<td>28</td>
<td>106</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>182</strong></td>
<td><strong>59</strong></td>
<td><strong>241</strong></td>
</tr>
</tbody>
</table>

Source: Denver Tax Assessor files; Coley/Forrest, Inc.
TRAVEL DEMAND

Travel demand, or the requirements for transportation by the users of the corridor, can be evaluated from traffic volume counts. An understanding of travel demand, both existing and potential, is essential to match the capacity of the roadway to this demand.

HISTORIC CHARACTERISTICS

Historic travel demand levels along Federal Boulevard have been relatively stable over the years. This segment spans an area which has long been developed, and in recent years has seen little variation in traffic flow.

Figure 4 is a plot of daily traffic volumes by location for four different years dating back to 1981. This figure illustrates the stability of traffic volumes in the corridor, with fluctuations of 5,000 vehicles per day or less typical throughout the years at various locations. Also of note are the historic volume characteristics along the length of the corridor. It can be seen that traffic volumes have tended to be higher on the south segment of Federal Boulevard with the highest volumes occurring between 6th Avenue and Alameda Avenue.
Table 5 lists average daily traffic volumes at various locations along Federal Boulevard for the years 1971, 1981, 1988, 1990, and 1992. Also shown are the percent change in traffic volume over the 21-year history and the annualized growth rates. It can be seen that, in general, traffic volumes in the corridor have exhibited significantly lower growth rates in the last 10 years (after 1981) than in the previous 10 years (before 1981).

**TABLE 5**

**SELECTED HISTORIC TRAFFIC VOLUMES**

<table>
<thead>
<tr>
<th>Location</th>
<th>Annual Average Daily Traffic (1,000's)</th>
<th>Percent Increase 1971 to 1992</th>
<th>Annual Growth Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North of 52nd Avenue</td>
<td>21.9  25.6  25.8  28.2  28.0</td>
<td>27.9</td>
<td>1.2</td>
</tr>
<tr>
<td>South of 52nd Avenue</td>
<td>25.2  29.5  27.0  29.0  29.0</td>
<td>15.1</td>
<td>0.7</td>
</tr>
<tr>
<td>North of I-70</td>
<td>28.5  33.4  34.6  30.9  29.6</td>
<td>3.9</td>
<td>0.2</td>
</tr>
<tr>
<td>South of I-70</td>
<td>26.4  29.5  26.0  26.7  29.0</td>
<td>9.8</td>
<td>0.4</td>
</tr>
<tr>
<td>North of 38th Avenue</td>
<td>24.7  26.5  24.0  24.7  29.0</td>
<td>17.4</td>
<td>0.8</td>
</tr>
<tr>
<td>South of 38th Avenue</td>
<td>26.4  27.1  24.0  26.9  29.0</td>
<td>9.8</td>
<td>0.4</td>
</tr>
<tr>
<td>At Speer</td>
<td>27.2  26.6  25.0  27.3  29.0</td>
<td>6.6</td>
<td>0.3</td>
</tr>
<tr>
<td>North of Colfax</td>
<td>25.8  30.4  29.0  31.0  30.0</td>
<td>16.3</td>
<td>0.7</td>
</tr>
<tr>
<td>South of Colfax</td>
<td>30.5  31.4  29.6  30.2  30.9</td>
<td>1.3</td>
<td>0.1</td>
</tr>
<tr>
<td>North of 6th Avenue</td>
<td>29.0  32.6  35.1  35.8  33.4</td>
<td>15.2</td>
<td>0.7</td>
</tr>
<tr>
<td>South of 6th Avenue</td>
<td>32.6  36.0  35.0  36.6  34.0</td>
<td>4.3</td>
<td>0.2</td>
</tr>
<tr>
<td>North of Alameda</td>
<td>26.8  34.2  33.4  34.2  35.6</td>
<td>32.8</td>
<td>1.0</td>
</tr>
<tr>
<td>South of Alameda</td>
<td>25.8  34.2  33.4  34.0  35.0</td>
<td>35.7</td>
<td>1.6</td>
</tr>
<tr>
<td>North of Mississippi</td>
<td>26.5  32.8  33.0  32.0  32.0</td>
<td>20.8</td>
<td>1.0</td>
</tr>
<tr>
<td>South of Mississippi</td>
<td>26.5  32.8  32.0  31.0  32.0</td>
<td>20.8</td>
<td>1.0</td>
</tr>
<tr>
<td>North of Jewell</td>
<td>25.0  32.4  31.2  30.5  32.6</td>
<td>30.4</td>
<td>1.3</td>
</tr>
<tr>
<td>South of Evans</td>
<td>22.3  28.2  25.8  28.4  31.0</td>
<td>39.0</td>
<td>1.6</td>
</tr>
<tr>
<td>AVERAGE</td>
<td></td>
<td>18.1</td>
<td>0.8</td>
</tr>
</tbody>
</table>
EXISTING TRAFFIC VOLUMES

Existing traffic volumes along Federal Boulevard were determined by means of an extensive traffic counting program conducted in 1992. Both daily and peak hour volume data were collected. Figure 5 shows the existing daily traffic volumes, as well as the PM peak hour directional traffic volumes. In addition to the roadway link volumes shown, both AM and PM peak hour intersection turning movement counts were conducted at each major intersection within the Federal Boulevard corridor.

As shown, daily volumes north of Colfax Avenue tend to be less than on the south segment of Federal Boulevard, ranging between 28,000 and 30,000 vehicles per day (vpd). South of Colfax Avenue, the daily volumes range from approximately 31,000 vpd to nearly 36,000 vpd, with the highest traffic volumes experienced between 6th Avenue and Alameda.

It can also be seen that the PM peak hour directional splits are different on the two segments of Federal Boulevard. North of Colfax Avenue, the predominant direction of flow is northbound, while south of Colfax Avenue the flow is predominantly southbound.
FORECAST TRAFFIC VOLUMES

As previously mentioned, travel demand levels along Federal Boulevard have been historically stable and, while this trend is expected to continue into the future, an examination was also made of regional long range traffic forecasts for the corridor.

Year 2010 traffic forecasts developed for the metropolitan area and in the Southwest Quadrant were analyzed in terms of standard system level techniques. Computer assigned traffic volumes were balanced among competing parallel facilities and smoothed over major cross streets and zone loading points to obtain an adjusted network assignment.

The results of this analysis indicated that the regional 2010 traffic volume forecasts, as shown in Figure 6, represent an overall composite increase in corridor travel demand of approximately 15% over 1992 levels. While these forecasts represent an annualized growth rate of less than 1%, they are significantly higher than the historic growth rates experienced since 1981. Therefore, these 2010 forecasts represent a reasonable estimate of the travel demand potential in the corridor.

It can be seen that ADT volumes north of Colfax Avenue are expected to range from about 32,000 vpd to 34,000 vpd. South of Colfax Avenue, the projected ADTs range between 35,000 and 41,000 vpd. Similar increases are shown for the PM peak hour projections, and no major changes from the existing directional patterns are anticipated.

![Diagram of 2010 Traffic Volumes]

**Legend**

- **Daily**
- **SB/NB Peak Hour**

*Figure 6*  
2010 Traffic Volumes
OPERATIONS

One qualitative measure of operations within a stream of traffic is Level of Service (LOS). The 1985 Highway Capacity Manual defines six levels of service in terms of driver comfort and delay, ranging from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. In the Denver metropolitan area, LOS E is considered to be the lowest acceptable level of service in peak travel periods while LOS D or better is desirable.

EXISTING LEVEL OF SERVICE

Based on the existing AM and PM peak hour turning movement counts, intersection level of service analyses were performed using Highway Capacity Manual methods for major intersections on Federal Boulevard, the results of which are summarized in Figure 7. As shown, all locations currently operate at or above LOS D during the AM peak hour. During the PM peak hour, operations are generally in the acceptable range, with three exceptions.

Existing operations at 38th Avenue and at Alameda Avenue are at LOS E. This condition indicates that these intersections are near capacity, and that increases in traffic levels may necessitate improvement of these intersections in the future.

Existing operations at the intersection of Federal and Speer Boulevard were analyzed as LOS F, indicating an over capacity situation. Here, immediate intersection improvements should be considered to minimize delay to motorists currently using the facility.

<table>
<thead>
<tr>
<th>Federal Blvd.</th>
<th>PEAK HOUR LEVEL OF SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM</td>
</tr>
<tr>
<td>52nd Ave.</td>
<td>B</td>
</tr>
<tr>
<td>50th Ave.</td>
<td>B</td>
</tr>
<tr>
<td>I-70</td>
<td>B/B</td>
</tr>
<tr>
<td>46th Ave.</td>
<td>B</td>
</tr>
<tr>
<td>44th Ave.</td>
<td>B</td>
</tr>
<tr>
<td>38th Ave.</td>
<td>C</td>
</tr>
<tr>
<td>32nd Ave.</td>
<td>B</td>
</tr>
<tr>
<td>25th Ave.</td>
<td>B</td>
</tr>
<tr>
<td>28th Ave.</td>
<td>B</td>
</tr>
<tr>
<td>23rd Ave.</td>
<td>A</td>
</tr>
<tr>
<td>20th Ave.</td>
<td>C</td>
</tr>
<tr>
<td>Colfax</td>
<td>B</td>
</tr>
<tr>
<td>14th Ave.</td>
<td>B</td>
</tr>
<tr>
<td>10th Ave.</td>
<td>B</td>
</tr>
<tr>
<td>8th Ave.</td>
<td>B</td>
</tr>
<tr>
<td>6th Ave.</td>
<td>B/B</td>
</tr>
</tbody>
</table>

Figure 7
Existing Level of Service
While not an issue in terms of LOS, Evans Avenue was found to exhibit unique operating characteristics which result in high accident rates, undesirable conflicts between turning traffic, bus loading, and pedestrians. In particular, the following problems were identified:

- Southbound left turning traffic on Federal Boulevard occurs in two left turn lanes. Upon reaching eastbound Evans Avenue, the southerly lane of traffic is sometimes blocked by a bus stopped just east of Federal. This situation creates a safety concern and inefficient operations.

- Westbound through traffic encounters a similar situation. After crossing Federal Boulevard in two lanes, the northerly lane sometimes encounters a bus stopped just west of Federal. In addition the two westbound through lanes are merged to form a single westbound lane in this area. The same safety concerns and operational inefficiencies also exist here.

- The west side of Federal Boulevard just south of Evans is the site of a major bus transfer station. Thus, the proximity of the bus stops on Evans Avenue is important in allowing passengers to make timely connections and transfers. Further, the volume of pedestrians crossing both Federal and Evans as a result of these transfer activities is one of the highest in the corridor.

Therefore, this intersection will require consideration of alternative upgrades to improve safety and pedestrian crossings.
FUTURE LEVEL OF SERVICE

Intersection LOS analyses were also performed based upon year 2010 traffic forecasts representing both historical growth trends as documented in Table 1 and regional forecasts representing an approximate 15% increase in travel demand. The existing intersection geometries were assumed, with some minor signal timing enhancements on the south segment.

The results of these analyses are summarized in Figure 8 which reflect the 15% volume increase. It can be seen that, under these conditions, all intersections will have sufficient reserve capacity to accommodate the increased traffic with the exception of the three problem intersections previously identified:

- Federal/38th Avenue
- Federal/Speer Boulevard
- Federal/Alameda Avenue

At the Federal/38th Avenue intersection, the existing situation is expected to decline to a LOS F by the year 2010. The Federal/Speer Boulevard intersection will continue to operate at LOS F if no intersection improvements are made.

Improvements to the intersection of Federal/Alameda Avenue are currently under design as part of another project by the City and County of Denver. With these improvements, this intersection should continue to operate at acceptable service levels to the year 2010.

<table>
<thead>
<tr>
<th>Federal Blvd.</th>
<th>PEAK HOUR LEVEL OF SERVICE</th>
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<tr>
<td></td>
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<td>B</td>
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<tr>
<td>50th Ave.</td>
<td>D</td>
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<td>C/B</td>
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<td>C</td>
</tr>
<tr>
<td>44th Ave.</td>
<td>B</td>
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<td>38th Ave.</td>
<td>D</td>
</tr>
<tr>
<td>32nd Ave.</td>
<td>B</td>
</tr>
<tr>
<td>29th Ave.</td>
<td>B</td>
</tr>
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<td>26th Ave.</td>
<td>B</td>
</tr>
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<td>23rd Ave.</td>
<td>A</td>
</tr>
<tr>
<td>20th Ave.</td>
<td>C</td>
</tr>
<tr>
<td>Colfax</td>
<td>B</td>
</tr>
<tr>
<td>14th Ave.</td>
<td>C</td>
</tr>
<tr>
<td>10th Ave.</td>
<td>B</td>
</tr>
<tr>
<td>9th Ave.</td>
<td>B/B</td>
</tr>
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<td>1st Ave.</td>
<td>B</td>
</tr>
<tr>
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<td>C</td>
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<td>Florida</td>
<td>B</td>
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<tr>
<td>Jewell</td>
<td>C</td>
</tr>
<tr>
<td>Evans</td>
<td>C</td>
</tr>
</tbody>
</table>

Figure 8

Year 2010 Level of Service
(Assuming no Improvement)
TRANSIT SERVICES

Currently, the Regional Transportation District (RTD) provides extensive bus service on Federal Boulevard throughout the length of the corridor. In addition, many of the cross-streets carry bus service, providing connections to the east and west.

COVERAGE/FREQUENCY

Figure 9 shows those roadways along the corridor served by bus routes as well as the number of buses per day serving various segments of Federal Boulevard. It can be seen that there is a high frequency of bus traffic along the corridor, particularly on the segment south of Colfax Avenue, where over 200 buses per day travel along Federal Boulevard. This number translates to between 6 and 12 buses per hour per direction of travel during primary operating hours.

North of Colfax Avenue, where the land use is more residential in character, the frequency of transit service is somewhat less at approximately 115 buses per day, or roughly one bus per direction every 20 minutes during primary operating hours.

These significant levels of bus traffic on Federal Boulevard indicate that any improvements to the corridor should include design considerations for transit vehicle operations.

Figure 9
Bus Services
PATRONAGE

Corresponding to the significant transit service available within the corridor, a high volume of bus riders board or transfer at bus stops along Federal Boulevard. Figure 10 shows the number of daily transit boardings by location on Federal Boulevard. It can be seen that a much higher number of boardings occur along the south segment of the corridor, which parallels the frequency of service on this segment.

Approximately 1,100 to 1,400 bus riders access the transit system at the 14th Avenue, Alameda Avenue, and Evans Avenue bus stops. This represents an average of about 75 to 90 boardings per hour at each location. Approximately 400 or more riders board at another seven locations on Federal Boulevard, which averages about 25 boardings per hour at each of these locations.

One significant consequence of this high level of transit use is the amount of related pedestrian activity in the vicinity of the bus stops along the corridor. The number of pedestrian movements per hour is related to bus activity. The amount of pedestrians, coupled with the high traffic volumes on Federal Boulevard, increases the potential for pedestrian/vehicle conflicts.
SAFETY

Transportation safety on Federal Boulevard is a major concern. High traffic volumes, coupled with significant transit traffic and pedestrian movements create an environment of high accident potential. This potential is reflected in the accident history and fatality record of the Federal Boulevard corridor.

ACCIDENT HISTORY

The historical accident experience on Federal Boulevard is one of the highest in the City of Denver for this type of facility. Two intersections, Federal/Alameda Avenue and Federal/Evans Avenue had the highest incidence of accidents in Denver for the two year period between January 1st, 1990 and December 31st, 1991. The intersection of Federal/38th Avenue was among the 20 highest accident intersections in 1991.

Figure 11 shows the average annual accident occurrence at each intersection on Federal Boulevard with five or more accidents per year. As shown, the intersections at Federal/Alameda and Federal/Evans have the highest occurrence of accidents with 45 and 30 each, respectively. Other high occurrence locations with approximately 20 accidents each are the intersections of Federal/38th Avenue, Federal/14th Avenue, and Federal/8th Avenue. An additional 11 intersections have an average occurrence greater than 10 accidents per year.
FATALITY HISTORY

In addition to having a significant occurrence of accidents, Federal Boulevard has experienced a high rate of fatalities caused by these accidents. Within the City of Denver, a total of 473 fatal accidents occurred during the ten year period beginning in 1983. Of these fatal accidents, 32 (about 7 percent) occurred on Federal Boulevard.

Of additional concern is the amount of fatal accidents involving pedestrians or bicyclists. Of the 32 fatalities, 22 involved pedestrians and three involved bicyclists. On Federal Boulevard, the percentage of pedestrian/bicycle fatal accidents is approximately 78 percent of all fatal accidents. The citywide average is about 24 percent. Nearly 20 percent of the pedestrian/bicycle related fatal accidents within the City and County of Denver occurred on Federal Boulevard.

Figure 12 shows the breakdown of fatal accidents within the Federal Boulevard Corridor by location. It can be seen that the fatal accidents are spread throughout the corridor with no major concentration occurring at a single point. This suggests that safety improvements are needed along the entire length of Federal Boulevard. Also of note is the high incidence of pedestrian/bicycle accidents relative to motor vehicle only accidents.
RIGHT-OF-WAY

The typical existing right-of-way (ROW) of Federal Boulevard within the study area is 100 feet. ROW on the segments of roadway between 13th Avenue and Alameda Avenue and the half-block south of Tennessee Avenue vary, however, between 80 and 90 feet. On the north segment, the section of roadway between 44th Avenue and I-70 is also 90 feet, as are some sections between 38th Avenue and 41st Avenue.

Existing lane widths within the right-of-way are typically sub-standard throughout the length of the corridor. Figure 13 shows the existing ROW on Federal Boulevard.

* Except for 80' ROW on the half-block south of Tennessee Avenue.

Figure 13
Existing Right-of-Way
III. SUMMARY OF CORRIDOR NEEDS

The foregoing analysis of existing and future conditions, combined with public input, identified several key findings and conclusions which have been translated into five primary corridor needs. The following discussion summarizes these findings and needs.

**ENHANCE URBAN DESIGN CHARACTER**

As stated in the Denver Comprehensive Plan the image of Federal Boulevard should be enhanced to reflect its status as one of the City's designated boulevards. Towards this end several urban design goals have been established for the Federal Boulevard corridor:

- Identify and reinforce the unique character and positive image of the traditional tree lined boulevard where it exists.
- Restore traditional boulevard conditions where possible in locations in which they have deteriorated.
- Establish streetscape conditions compatible with boulevard status in those locations where they have been lost or did not exist.
- Provide continuity of the boulevard image throughout the length of the corridor. Design should be compatible with Denver's established boulevard and parkway image while allowing the expression of the unique character of Federal Boulevard and the neighborhoods and districts it serves.
- Enhance the comfort and safety of the pedestrian environment and facilitate pedestrian connections across the boulevard.
- Recognize districts with unique physical, historic and cultural qualities.
- Identify, preserve and enhance significant landmark structures, districts and spaces.
- Maximize opportunities for neighborhood identification, connections and linkages.
- Reinforce the fixed boundaries and physical buffers between residential and commercial districts both along the corridor and into adjacent neighborhoods.

To facilitate the realization of these goals specific standards and guidelines will be developed which will apply to both public right-of-way improvements and those aspects of private development that most impact the community.

**Therefore the Federal Boulevard Corridor Plan will establish urban design standards and guidelines as the basis for future public and private design and construction projects.**
MINIMIZE RIGHT-OF-WAY ACQUISITION

Throughout the history of Federal Boulevard, there has been a concern that future roadway improvements would require additional right-of-way. General opposition to expanding the Federal Boulevard right-of-way beyond the prevailing 100-feet of width has been based upon:

- Potential negative effects on businesses adjacent to Federal Boulevard, many of which have relatively shallow lot depths of 125 feet or less.
- Concerns relating to the potential loss of existing parking and landscaping.
- Concerns that the acquisition of a portion of an existing parcel would be a deterrent to redevelopment.

As indicated previously, the current practice of the City is to acquire additional right-of-way from redeveloping parcels sufficient to provide a total right-of-way of 120 feet. This generally results in a dedication of 10 feet of land where the existing right-of-way is 100 feet wide. However, there are several segments of Federal Boulevard having a right-of-way width of 80 feet or 90 feet which means that some parcels would be required to dedicate a 20 foot strip of frontage.

This practice also means that full development of the Federal Boulevard corridor will require perhaps 30 to 50 years or more before the 120 foot right-of-way is fully acquired. Thus, during this extensive interim period, the corridor will continue to function with its present deficiencies.

Therefore, the focus of the Federal Boulevard Corridor Study will be to develop alternatives which minimize the need to acquire additional right-of-way beyond the typical 100-foot width and which allow more timely implementation of needed safety and operational improvements.
CORRECT SAFETY DEFICIENCIES

Overall safety within the Federal Boulevard corridor is one of the most critical issues. While safety concerns are usually the composite of numerous contributing factors, there are at least five major elements of the safety problem as it relates to Federal Boulevard.

- Federal Boulevard is one of the highest ranking corridors in the City in terms of pedestrian/bicycle accidents and fatalities. The causes of this situation are many and varied. However, it is apparent that the lack of pedestrian refuge areas in a relative high traffic volume corridor together with significant pedestrian activity is a key deficiency. This deficiency is particularly acute in the segment of the corridor south of Colfax where roadway widths of up to 80-feet exist. Bicycle safety issues also encompass a variety of factors including lack of night visibility, enforcement of bike laws, and general driver awareness. Enhancing bicycle and pedestrian safe areas along with a series of traffic control measures and transit access improvements will be a key element in improving corridor safety.

- Federal Boulevard also ranks high in terms of general traffic accidents. This is generally a result of a combination of high traffic volumes, extensive bus traffic, deficient lane widths, on-street parking conflicts in the north segment, and generally unrestricted turning movements, especially in the south segment.

- The presence of on-street parking creates conflicts between vehicles as well as pedestrians. The outside travel lane becomes obstructed with vehicles maneuvering into and out of parking spaces and introduces pedestrians into the roadway. Alternative provisions for on-street parking can improve both pedestrian and vehicular safety and should be considered in the corridor.

- Turning movements are frequent along Federal Boulevard at both public cross streets, and, especially in the south segment, at private driveways. As a result, the need for exclusive turn lanes and acceleration/deceleration lanes is increased. Alternatively turning movement restrictions can improve safety and reduce the need for additional lanes. Both options have application in different portions of Federal Boulevard.

- The limited space along Federal Boulevard has resulted in an evolution of sub-standard provisions for all users of the corridor. Pedestrian spaces are minimal in many locations, travel lanes and parking spaces are narrow, and transit vehicles and passenger areas must function in limited lanes and boarding areas. Improvement options should incorporate improved design dimensions throughout the corridor.

Therefore, the Federal Boulevard Corridor Plan should incorporate a raised median throughout its length to provide a safe pedestrian refuge area, restrict excessive turning movements and conflicts, and separate opposing traffic flows. On-street parking should be relocated out of travel lanes and standard design dimensions should be incorporated to enhance the overall safety characteristics of the corridor for pedestrians, buses, and vehicles. A comprehensive package of short-term safety improvements should also be applied to the entire corridor.
**ENHANCE TRANSIT OPERATIONS**

The safety issues along Federal Boulevard encompass several aspects of transit operations. In addition, however, special alternatives are required to enhance overall transit operations. These include providing improved bus stops, especially in the south segment where bus and passenger volumes are the highest. In addition, bus travel in substandard curb-side lanes is a problem for transit operating efficiencies as well as pedestrians on the adjacent sidewalk.

Of particular concern are bus operations in the south segment of the corridor where traffic and bus volumes are both relatively high and only two lanes are available in the northbound direction. Buses frequently stop in one of the two lanes which causes significant traffic delays and potential safety problems as motorists seek to merge into the left lane to pass around stopped buses. Bus pullouts have been implemented in some locations to avoid these lane blockages. However, the pullouts may create a negative impact on transit travel times, as buses must wait to merge back into through traffic lanes.

Therefore, curbside lanes should be widened to standard dimensions to accommodate transit needs and related pedestrian amenities should be incorporated into bus stops, access sidewalks, and waiting areas within the public right-of-way. A continuous third lane should be provided in each direction in most of the south segment where bus activity is the highest and turning movements are the greatest.

**UPGRADE PROBLEM INTERSECTIONS**

As indicated in the operational analyses of existing and future conditions, traffic on Federal Boulevard operates now and is expected to operate in the future at generally acceptable levels. Traffic operational needs are therefore limited and generally minor in scope. At three locations, however, some capacity related improvements will be necessary and a fourth intersection will require safety improvements for pedestrians and bus operations.

Therefore, the intersections of Federal/38th Avenue, Federal/Speer Boulevard, and Federal/Alameda Avenue should be upgraded to achieve minimum acceptable levels of service. The intersection of Federal/Evans Avenue requires geometric improvements to accommodate vehicle turning movements, bus stops, and pedestrians.
IV. ALTERNATIVES ANALYSIS

NORTH SEGMENT

Between 52nd Avenue and Colfax Avenue, the corridor is predominantly residential in nature with commercial development occurring north of I-70 and at major cross-streets. The sports complex abuts the corridor between 20th Avenue and Colfax. The typical cross-sections discussed in this section apply to the predominantly residential north segment, between 20th Avenue and I-70. Specific recommendations for the sports complex and the segment north of I-70 are presented later.

DESCRIPTION OF ALTERNATIVES

Three alternative concepts were evaluated in the north segment. Because of the unique residential character of the north segment, a major planning constraint is that the existing right-of-way not be expanded and that the existing curb to curb width be retained. Thus, all safety improvements related to implementing a median and relocating on-street parking must occur within these existing limits.

Figure 14 shows the existing typical cross-section of the north segment of Federal Boulevard, as well as the three alternative cross-sections (A, B, and C). Each alternative retains the existing curb-to-curb dimension of 60 feet as well as the existing right-of-way of 90 to 100 feet.

Each alternative includes a raised median for pedestrian crossings. Raised medians are typically full-length with cut outs for left-turn bays. Where available width is limited, a mid-block median may be considered. This type of median is terminated prior to intersections to form left-turn bays, and the left-turning vehicles are then separated from oncoming traffic by painted pavement markings. Two alternatives (B and C) include a mid-block median and one alternative includes a full length median (A).
EVALUATION OF ALTERNATIVES

The analysis of existing and future conditions presented previously documented several deficiencies and needed improvements in the north segment which makes the existing cross-section unacceptable. Among these deficiencies are significant safety problems arising out of a combination of sub-standard lane widths, on-street parking, and a lack of pedestrian controls and amenities. Therefore, some action is required to address these problems.

The full length median alternative (A), which does not include on-street parking, does not allow for standard 11 foot lane widths and, in fact, the lanes are somewhat narrower than existing. In order to provide standard lane dimensions and a full length median, the curb-to-curb dimension would need to be increased beyond the existing 60 feet of width. This alternative, therefore, does not meet basic safety and urban design needs defined previously.

The mid-block median alternative which does retain on-street parking (B) does not provide standard 11 foot lane widths. The on-street parking must be relocated if the pedestrian median and adequate lane dimensions are to be implemented while the existing curb-to-curb dimension is retained. For this reason, this alternative also does not meet the safety and urban design needs of the north segment.

The mid-block median alternative with pull-out parking (C) does provide standard lane width dimensions within the existing 60-foot cross-section. It should be noted the addition of parking bays cutting into the tree lawn substantially diminishes the quality of the boulevard streetscape and therefore should be utilized only where suitable off-street parking solutions cannot be created. Because this alternative best meets the safety needs of the corridor and allows for significant landscape improvements, it is identified as the preferred alternative.

In addition, as shown in Figure 15, where retention of on-street parking is needed, pull-out parking bays could be provided which are out of the travel lanes.

Figure 15
Typical Pull-Out Parking Application
SOUTH SEGMENT

South of Colfax Avenue, the land uses adjacent to Federal Boulevard are primarily commercial in character and the amount of right-of-way less than 100 feet imposes a different set of constraints than in the north segment.

DESCRIPTION OF ALTERNATIVES

Two alternative concepts were initially developed for evaluation in the south segment of Federal Boulevard. One alternative (A) maintains the existing curb to curb width and existing right-of-way. The second alternative (B) provides a center median within a widened roadway and within a consistent 100-foot right-of-way.

Figure 16 shows the existing typical cross-section of the south segment of Federal Boulevard, as well as the two alternative cross-sections.

The first alternative (A) maintains the existing curb lines and would not require additional right-of-way. Standard lane widths are provided throughout. These conditions are achieved by eliminating the third southbound through-lane which also results in balancing the number of lanes per direction. It should be noted that a median could also be incorporated into this option.

The second alternative (B) includes a mid-block raised center median which is terminated prior to intersections in order to form left-turn lanes. In addition, the existing curb to curb width of 60-feet is widened to 80-feet and a 100-foot right-of-way is required throughout the entire south segment. This alternative also provides standard lane dimensions.

Figure 16
Alternative Typical Sections
South Segment
EVALUATION ALTERNATIVES

The analysis of existing and future conditions presented previously documented the following deficiencies and problems which make the existing cross-section unacceptable in the south segment.

- Accident occurrence and pedestrian fatalities are among the highest in the city which results from a combination of factors including substandard lane widths, excessive turning movements at streets and private driveways, and a lack of pedestrian protection in certain locations.

- Transit operations and passenger activity is highest in the south segment which nearly utilizes the outside travel lane to capacity during peak travel periods and results in high pedestrian crossing volumes at major stops. This is particularly significant in the northbound direction which has only two through lanes.

- Access to private businesses is largely uncontrolled with minimal spacing resulting in high turning volumes and frequent lane changing. This condition both decreases capacity and increases vehicle and pedestrian conflicts.

Therefore, some action is required which incorporates a range of multi-modal improvements over a significant length of the corridor in a compressed time frame.

Alternative A has several characteristics which make it unacceptable:

- Capacity analyses conducted at the major cross streets indicated that unacceptable service levels would occur at nearly all intersections due to the reduction of the southbound lanes from three to two. Thus, additional turn lanes and auxiliary lanes would have to be added at all major intersections which would result in most of the length of Federal Boulevard actually being wider than the intent of this alternative which is to maintain the existing street width.

- In order to accommodate transit operations, which are the highest in the south segment, bus pull-outs at nearly all bus stops would be needed to maintain safe traffic flow. This also results in a wider roadway than indicated by the typical cross-section, and would create operational problems and delays for buses.

- The south segment is also characterized by numerous private driveways which are required by the State Highway Access Code to have acceleration/deceleration lanes. As a result of these additional lanes, the actual roadway width would be significantly greater than indicated by the typical cross section throughout most of the south segment.
Alternative B provides significant pedestrian safety improvements by reducing turning movements across sidewalks and providing a refuge area in the middle of the street as a result of the proposed planted median. The need for an improved outside transit lane and acceleration/deceleration lanes (in the northbound direction) for local access is provided with the widened roadway. It should be noted that additional right-of-way is required only on those sections of Federal Boulevard where the existing right-of-way is less than 100 feet. No right-of-way would be required from the majority of parcels in the south segment. Because all of the urban design, safety, transit, and right-of-way objectives are addressed in this alternative, it is identified as the preferred concept.

RIGHT-OF-WAY ACQUISITION ELEMENTS

South of Colfax Avenue, approximately 136 of the 574 parcels are located on segments of Federal Boulevard where the right-of-way is 80 or 90 feet and where achieving a 100 foot right-of-way would require an additional 10 feet of right-of-way. While this only represents approximately one-third of the frontage in the south segment of the corridor, a preliminary field investigation was undertaken to develop an understanding of the land use impact that acquiring an additional 10 feet of right-of-way might have on each parcel. The investigation provides a general indication of the magnitude of the potential land use impact. The preliminary results are summarized in Table 6.
TABLE 6
SUMMARY OF POSSIBLE IMPACTS ASSOCIATED WITH AN ADDITIONAL TEN FEET OF RIGHT-OF-WAY: FEDERAL BOULEVARD: SOUTH OF COLFAX AVENUE

<table>
<thead>
<tr>
<th>Type of Property</th>
<th>Number of Lots</th>
<th>Remove Front Lawn &amp; Abut Building</th>
<th>Remove Substantial Parking</th>
<th>Remove Portion of the Building</th>
<th>Underground Storage Tanks</th>
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<td>Single Fam.: Nonresid.</td>
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<td>44</td>
<td>36</td>
<td>12</td>
<td>18</td>
<td>25</td>
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</table>

Sources: Denver Tax Assessor Files; Coley/Forrest field investigation.

Approximately 44 of the 136 parcels could possibly continue to function in their current use if the parcel depth were reduced by 10 feet. Current uses on these parcels generally include a few single-family homes which are sufficiently set back from Federal Boulevard; restaurants or bars where parking is adjacent to the building and not in front of the facility along Federal Boulevard; used car dealerships where an additional 10 feet would take some parking; and parcels in public ownership and used for parks.

The preliminary investigation also suggests that if an additional 10 feet were acquired, 67 parcels of the 136 parcels would be impacted from a land use perspective in some way.

For 36 of these parcels, acquiring 10 feet would probably remove the front lawn and cause Federal Boulevard to abut the building with no opportunity for parking in front. This includes 15 single-family homes that are currently in residential use, 6 single-family houses that have been converted to retail or office use, several motor vehicle service facilities, and several buildings in office use.
For 12 of these parcels, an additional 10 feet would remove substantial parking. Often this means re-striping parking from angled parking to parallel parking.

For 18 parcels, an additional 10 feet of right of way would take a small portion of the structure.

For one parcel, taking an additional 10 feet might impact the possible presence of underground gasoline storage tanks. [There are a total of 18 old gasoline stations which might have underground storage tanks; these other parcels have been accounted for above because the impact of ten feet also impacted other aspects of the parcel use.]

For 25 parcels, it was not possible to determine the potential impact of an additional ten feet of right-of-way. This was due primarily to the lack of definitive property boundary indicators in the field. A survey of such parcels would be required to verify this frontage and to assess any potential impacts.
V. PLAN RECOMMENDATIONS

Based on the alternatives analysis, a recommended plan was developed to best meet the design objectives and safety needs of the Federal Boulevard corridor. The plan consists of recommendations for the corridor as a whole as well as specific recommendations unique to the north and south segments.

CORRIDOR-WIDE RECOMMENDATIONS

IMPLEMENT URBAN DESIGN FRAMEWORK PLAN

The urban design goals for Federal Boulevard will be realized over time by implementing the design principles and standards described and illustrated in the Corridor Plan. Although design details responding to the specific needs and conditions at many scales will be determined in the design phase of each project it is essential that a common vocabulary is understood and incorporated in every project. In this way an attractive and unified identity will be created to restore Federal Boulevard’s proper role in the City’s parkway system.

Basic urban design concepts and standards are presented in the Urban Design Matrix (Figure 17). The matrix illustrates the relationships between the conditions found in various corridor districts and the applicable urban design standards. The Urban Design Framework Plans (Figures 18a and 18b) present a very broad overview of the corridor’s important features. More detailed urban design framework plans should be completed as part of the design phases for specific projects.

<table>
<thead>
<tr>
<th>ZONES</th>
<th>8 MEDIAN</th>
<th>DETACHED WALK</th>
<th>TREE LAW</th>
<th>STREET TREES</th>
<th>DETACHED WALK PAIRED TRANSITION ZONE</th>
<th>TREES IN GRATES</th>
<th>PEDESTRIAN LIGHTS</th>
<th>PARKING LOT LANDSCAPING</th>
<th>PEDESTRIAN AMENITIES (Benches, Trash Receptacles, Special Planting)</th>
</tr>
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<tbody>
<tr>
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</tr>
</tbody>
</table>

*A continuous urban design treatment is desired from Colfax north to I-70 to unify the corridor and integrate the sports complex into the northwest Denver neighborhoods. Further analysis of urban design, development, and transportation issues is recommended to follow.

Figure 17

Urban Design Matrix
Specific urban design consideration should be given to other activity areas in the corridor which are tailored to the unique characteristics of each. Typical of such activity areas are the following:

- **High Image Intersections** which are unique in terms of the historic boulevard, views or related pedestrian activity.

- **Corridor Gateways** which distinguish the boulevard image of Federal Boulevard from other corridors and which signify entry to a special place.

- **Neighborhood Gateways** which are unique to each neighborhood’s history and image.

- **Bicycle Path Crossings** which require both definition and protection.

- **Bus Stops** which should be made compatible with adjacent land uses and the magnitude and scale of the pedestrian activity which occurs.
Figure 18A

Urban Design Framework
North Segment
The implementation of the urban design standards and guidelines involves improvements to both the public right-of-way and private developments. Major elements of both types of improvements are presented in detail in the following sections.

**Public Right-of-Way Improvements**

General Design Intent: Federal Boulevard should be as conducive to pedestrian traffic as it is to vehicular traffic. Improvements will include sidewalks and shade trees along both sides of the street. The median will improve the scale of the street, diminishing the visual impact and noise from multiple lanes of traffic.

The design theme should be consistent with the standards and image established for parkways and boulevards throughout the City of Denver, while allowing for the expression of Federal's many unique subdistricts. Continued design development will be conducted in the first major design phase to complete the specific overall design image for the corridor and to further define those elements of the design vocabulary which may vary.

The typical street edge condition will include a 5' wide clear walking surface and a 5' wide amenity zone. The amenity zone may include, in various locations, the curb, special paving or grass, street trees in grates or lawn; street lights; decorative pedestrian lights; safety walls and/or raised berms; planter pots; trash receptacles; bus stops and parking meters. Commercial gateway identification signs should be set outside of the Federal right-of-way.
Consistent Elements: Several design elements should be applied consistently throughout the corridor in order to establish a strong visual image and pedestrian amenity.

- Sidewalks: A standard 5’ wide detached concrete sidewalk should be provided along both sides of Federal Boulevard. Trough type ramps and curb cuts should be provided to comply with accessibility standards at each intersection. Ramps are required to contrast with adjacent sidewalk and crosswalk paving per ADA standards.

- Amenity Zone: The typical street edge condition will include a 5’ wide amenity zone between the curb and sidewalk. This amenity zone should contain a tree lawn and regularly spaced street trees in most circumstances.

  Variations: The amenity zone may also include, as appropriate, special paving with trees in grates in some commercial contexts, street lights and decorative pedestrian lights; safety walls and/or raised berms; signs; planter pots; trash receptacles; bus stops and parking meters. The proper combination of these elements will depend on the conditions and needs of the specific location, with the most clear distinction being between residential and commercial districts.

- Existing Guideline Documents: Two important documents should be followed closely in the development of the corridor: the 1993 City and County of Denver Streetscape Design Manual and the Rules and Regulations for the Landscaping of Parking Areas. These documents provide important information and standards for sidewalks, trees and landscaping, parking lot screening, lighting and other amenities as well as maintenance guidelines and review and approval procedures.

- Median: A raised center median should be implemented wherever possible to reduce vehicular conflicts, improve the scale and appearance of the boulevard and to improve pedestrian safety. This median should be planted with trees, shrubs and ground covers where appropriate and paved with decorative pavement when too narrow to plant. The center median should be raised 24" above the street pavement or 18" above the curb. Median walls are preferably sloped inward above a standard height curb. Additional detailing wall caps and decorative features should be considered as part of the median wall treatment. Median noses and pedestrian crossing areas should be paved with either well detailed concrete or unit pavers at high use intersections.

  Variations: Special pilasters or other design elements may be used to create a unique design theme for the boulevard and to help signify pedestrian crossings, neighborhood identities or district gateways. Plantings should be focused at median ends and pedestrian access points to provide visual interest, and seasonal color. Denver Parks and Recreation Department must be involved in all design decisions that will involve future maintenance of landscaping in the public right-of-way.
Federal Boulevard Corridor Plan

Pavement Striping

PLAN VIEW

SIDE ELEVATION

END ELEVATION

Raised Median

City and County of Denver
Intersections: Intersections offer an opportunity for special boulevard design elements to be used to best advantage due to high visibility and pedestrian use. Consideration should be given to upgrading pedestrian crosswalks in the highest use areas through variation in color, texture, pattern or material. Heavy traffic will tend to obscure subtle design motifs or color change so careful consideration should be given to long term wear in order to maintain attractiveness. The median area closest to the intersection may be planted with flowers or decorative foliage. Pedestrian lights, neighborhood monuments and special attention to the appearance of private development may enliven these areas and contribute to the overall corridor theme. As a part of an overall graphic image study conducted during the design phase, further attention should be given to high pedestrian use intersections to determine the appropriate boulevard design treatments.
Street Trees: Recommendations for tree location and spacing contained in the *Denver 1993 Streetscape Design Manual* should be followed. Various plant material recommendations are also referenced in the manual. Actual tree species should be selected from this list and specified at the implementations phase. Metal tree grates are recommended for all trees in paved areas.

Lighting: City-wide standards for both street and pedestrian lighting should be followed. Spacing and location information for both high mast "hockey puck" and decorative globe-type luminaires are provided in the *Streetscape Design Manual*. Special effect lighting such as seasonal string lighting in trees or uplighting of street trees should be considered for well developed retail areas. Only street lights should be used in residential areas except at bus stops where decorative pedestrian lights can be used.

Traffic Signals: City standard traffic signals will be used throughout the corridor. These generally consist of a pole and single mast arm with a street light mounted on the pole.

Furniture: City standards should be followed for benches, trash receptacles, planter pots, newspaper racks and bicycle racks. These items will generally be used where there is high pedestrian activity such as retail or commercial areas. Guidelines for locations of these elements are found in the *Streetscape Design Manual*.

Bus Stops: A variation to the standard RTD bus shelter could be considered for Federal Boulevard. These shelters might reflect the boulevard design character discussed above and could contain interpretive graphic panels illustrating historical aspects of Federal Boulevard. Non-standard shelters must be approved by RTD. Special paving, trees in grates, and pedestrian lighting should also be included to enhance bus stop areas.

Signs: City standard street name signs are currently (Spring '94) under review by the City with the intent of improving the legibility and graphic quality as well as creating a unique signature sign element for the City of Denver as a whole. These street signs should be used throughout the city to distinguish Denver from the surrounding communities.

Colors: All metal elements such as light poles, signal poles, benches, trash receptacles, etc. should be painted with the city standard "Federal Green" (federal color specification #14056). Additional colors may be considered for accent areas of such elements as median pilasters, gateway markers and neighborhood monuments. These accents might be accomplished in colored concrete, masonry or other durable non-painted materials. A specific graphic vocabulary should be developed as a part of an overall graphic image study during the design phase.
Unique Elements: In addition to the consistent design elements found throughout the corridor, several unique elements ought to occur at key locations. These are areas that deserve special attention in order to preserve a unique character or enhance a special place.

- Corridor Gateways: Gateways should be considered at each end of the Federal Boulevard corridor. These should generally occur near the City and County of Denver limit line. Other locations might include points of access from major arterials such as Speer Boulevard, Colfax Avenue and West 6th Avenue. Motorists and pedestrians should realize when they are in Denver and that Federal Boulevard is a special place. Gateways could take the form of larger scale monuments on each side of the street and possibly in the median. Monuments may be accompanied by multiple light clusters, entry signs and unique planting. The specific locations of gateway markers will be determined in the design phase.

- Neighborhood Gateways: Neighborhood entry monuments such as those at Potter Highlands at 36th Avenue and Federal Boulevard are encouraged along the corridor. Nineteen different neighborhoods abut Federal Boulevard and the identification of those neighborhoods in a manner that creates awareness of Federal itself will add a sense of scale and community to the boulevard. Guidelines for these monuments can be found in the Streetscape Design Manual and other materials available from Denver Parks and Recreation Department and the Denver Planning Office. Further conversation with neighborhood groups should be conducted during the design phase to determine the exact locations for these markers.

- Subdistricts: Several distinctive subdistricts exist in the Federal Boulevard corridor such as the Sports Complex, the Asian Center, several historic districts and the Speer Boulevard intersection area. These areas should be recognized for their specific use or function. In addition to the standard corridor design elements, unique design elements could be used to enhance these areas and emphasize their unique physical
or cultural qualities. Care should be taken so that the treatment of these subdistricts fits into the overall design theme for Federal Boulevard. Several of these subdistricts, as described in the section on "Urban Design/Land Use Character", should be given further study so that their full potential may be realized.

Special Elements: In some areas of the corridor, the use of special design elements may be appropriate. Pedestrians in the Sports Complex, for example, could benefit from low walls and bollards placed on the sidewalk near the curb. Other high-use pedestrian areas such as the retail districts at 38th Avenue or 52nd Avenue could benefit from well designed safety walls. In other areas where not as much sidewalk paving is required but pedestrian safety and comfort is a concern, the walls could retain a planted berm. Low walls and berms may become a design theme much in the same way they have been used in Cherry Creek North.
Neighborhood Protection Elements (North Segment):

Protective efforts suggested by the citizen committees representing neighborhoods north of Colfax Avenue for consideration by the City to retain single family structures for residential use include:

- Requests for rezonings to "B" zone districts are not consistent with the goals of this plan and, therefore, commercial development should be limited to existing zoned nodes of development.

- If rezonings are proposed, the Planned Unit Development (PUD) process is encouraged along with the following criteria, 1) uses are neighborhood retail or service, 2) structures are residential in scale, and residential character of existing structures is retained, 3) transitions and buffers to residential uses are provided, 4) landscaping and screening are provided for visual enhancement, 5) no additional right-of-way on Federal Boulevard is required for acceleration/deceleration lanes.

- The B-4 zone district is not compatible with adjacent areas and the City should consider changes to eliminate certain uses and reduce floor area ratios. In addition, the B-4 zone district at the intersection of Federal and Speer is considered inappropriate and redevelopment in this area should be encouraged to utilize the PUD district.

- An overlay zone district should be adopted for Federal Boulevard to include the design guidelines contained in the Federal Boulevard Corridor Plan.

- The use of City programs to rejuvenate existing commercial nodes should be evaluated for application to the Federal Boulevard corridor.

Private Development Improvements

General Design Intent: Recommendations for existing and redeveloped private property adjoining Federal Boulevard are included here so that these land owners can participate in the enhancement of the corridor.

Owners of commercial property on Federal Boulevard that are interested in redevelopment or improving the function and appearance of their property should be aware of studies of the design and layout of typical shallow commercial lots along the corridor that were conducted by the City of Denver. These studies were published in 1991 in a document titled Federal Boulevard Alternative Design Tests which is available from the Denver Planning Office.

Parking Lot Screening: All parking lots along Federal Boulevard should be screened from the view of pedestrians on sidewalks or cars traveling on the street. Screening can be accomplished with walls, fencing, hedges or berms. Guidelines for the screening of parking lots can be found in the Denver Rules and Regulations for the Landscaping of Parking Areas. These guidelines should be implemented as adjacent improvements occur on Federal Boulevard if not before.
In order to enhance the boulevard image of Federal the 10’ wide landscaped area required by the Parking Lot Landscape Regulations should occur entirely on private property where lot depths in excess of 125 feet allow. This area should include 3 trees per 1000 square feet placed informally or in street tree fashion. The surface of this area should be covered with lawn or ground covers and shrubs. This area should not be paved. A good example of this type of setback treatment is currently in place at the Brentwood Shopping Center on the west side of South Federal Boulevard, north of Evans Avenue.

New buildings should be placed adjacent to the required zoning setback area with entrances and windows on Federal Boulevard or an immediately adjacent building face. Setback areas should be landscaped with trees, shrubs and ground covers where pedestrian access is not required. Parking areas should be behind or between buildings and screened as discussed above. Parking in front of buildings diminishes retail visibility and the attractiveness of the boulevard. New buildings greater than three stories in height could possibly be stepped back from the street at the third level in order to establish a human scale for the corridor.

Side and Rear Lot Landscaping/Screening:

- **Setbacks:** When new retail or commercial developments occur adjacent to residential areas and there is an intervening public street the building should setback 25’ from the public right-of-way if the setback area is to be landscaped or 15’ if screen walls or berms are added to the landscaping.

  If there is only an intervening alley or direct abutment of commercial and residential uses the non-residential use should be separated from residential uses by a 6’ - 8’ high screen wall on the property line with an additional 10’ wide landscape buffer strip with trees to screen commercial buildings and uses.

- **Landscaping:** The 25’ wide setback areas along public streets should be landscaped with at least one tree per 500 square feet with more than half the trees being evergreen. The ground plane should be planted with turf or shrubs and groundcovers.

  The 15’ wide setback alternative must have a berm or low wall 3’ - 4’ high and at least one tree for every 500 square feet with half the trees being evergreen. The ground plane should be planted with turf or shrubs and groundcovers.

  The screen wall and 10’ wide buffer strip areas should be planted with 3 trees per 1000 square feet capable of screening building areas visible above screen wall.

- **Walls and Fencing:** Walls and fencing should be built of high quality materials similar to, or the same as, that used for the primary buildings on the site. In general, all walls and fencing should be accompanied by landscaping, as discussed above.

- **Access to Alleys:** Direct access to alleys from new retail or commercial developments will be discouraged in order to preserve residential character.
Service Area Screening:

- Walls and Fencing: Service areas should be screened on all sides with walls or fencing of adequate height to screen all objects. Recommendations for wall or fencing type are the same as described above.

- Landscaping: Landscaping adjacent to service area walls or fencing should be contained in a strip at least 5’ wide. Plant materials can be a continuous hedge with plants 3’ on center or trees and shrubs mixed together. If trees and shrubs are to be used, they must obscure at least 50% of the wall or fence from view.

Signs:

- Ground Mounted: Ground mounted signs adjacent to Federal Boulevard should adhere to the Denver sign code as a minimum. In addition, all ground mounted signs should be "Monument-Style" with no visible support poles. These signs should be no taller than 20’ and be located in landscaped areas. Ground mounted signs should internally illuminate lettering and logos only.

- Building Mounted: Building mounted signs are also governed by the Denver sign code. Back-lit awnings used as signs are discouraged due to excessive glare. Lighted retail signs should be located no higher than the first floor of multi-story buildings in order to maintain human scale. Building identification signs may occur on upper floors.

Billboards: No new billboards should be allowed on Federal Boulevard and existing billboards should be removed when permits expire or sites are redeveloped. Billboards are not conducive to the "Boulevard" image being created or enhanced along Federal Boulevard.

IMPLEMENT SAFETY IMPROVEMENTS

Three distinct actions are recommended to improve the overall safety characteristics of Federal Boulevard.

- Construct Center Median. To improve pedestrian safety along Federal Boulevard, it is recommended that a continuous raised center median be constructed. At minor cross streets and appropriate mid-block locations where warrants are met, pedestrian walkways should be located through the raised median to allow a point of refuge during crossing. The median should provide landscaped features consistent with the Urban Design Framework Plan.

This raised center median should be constructed so that turning movements at selected minor cross-streets and driveways are restricted to right-turns only. This affords pedestrians additional safety by eliminating conflicts with left-turning vehicles.
In addition to the pedestrian safety benefits of the mid-block median, the relocation of turning conflicts from minor cross-streets to the major cross-streets will generally improve traffic safety and operations.

- **Upgrade to Minimum Design Standards.** As previously discussed, the existing lane widths along the corridor are substantially less than the minimum requirements for this class of roadway. Narrow lanes have a detrimental effect on traffic safety and, in particular, on transit operations.

  It is recommended, therefore, that all travel lanes be a minimum of 11-feet in width with a 1-foot clearance to median curbs and a 2-foot clearance to outside curbs (see Figure 17 and 18).

- **Implement Safety Enhancement Package.** To provide immediate safety benefits prior to the implementation of major construction projects in the future, it is recommended that the following short-term safety enhancement actions be implemented or continued.

  - The City and County of Denver currently monitors travel speeds in relation to posted speed limits. The posted speed limit on Federal Boulevard is currently 35 MPH north of Alameda and 40 MPH south of Alameda. It is recommended that speed monitoring continue on Federal Boulevard and that speed limits be reevaluated by the city and the state when major reconstruction projects are designed and implemented.

  - Continue the City’s current initiative of posting advisory signs for pedestrians at signalized intersections to instruct people on the proper use and waiting period for a pedestrian indication. The program should be focused on Federal Boulevard, as well as other streets that exhibit similar safety problems, with emphasis on high activity locations frequented by the elderly and school children.

  - Install pedestrian indications on all approaches at signals and investigate applicable timing modifications as appropriate.

  - Continue the City’s current practice of providing stop bars at all signalized intersections to minimize vehicle encroachment into crosswalks and investigate special supplemental signing and pavement markings for application at major pedestrian crossings.

  - Investigate the potential application of a temporary or simulated median as a means of correcting immediate safety problems at locations where funding or right-of-way constraints cause delays to the implementation of a permanent solution. The effects of turn restrictions on local streets can also be monitored during this period.
Emphasize Federal Boulevard improvements for federal transportation funding, particularly relative to safety improvement programs, over the next three-year budgeting period.

IMPLEMENT DENVER BICYCLE MASTER PLAN

The 1993 Denver Bicycle Master Plan proposes improvements toward the city-wide goal of establishing a continuous one-mile grid system of on-street or off-street bicycle routes throughout the city. Since Federal Boulevard is not recommended as a bicycle route, the Bicycle Master Plan includes several proposed improvements to routes crossing or parallel to the corridor in order to achieve a one-mile grid in the area:

Proposed new routes and signage improvements include:

- 35th Avenue - Consolidate the former 33rd/35th Avenue one-way routes on 35th Avenue from Perry Street to Navajo Street.
- 17th Avenue - Enhance route between Sloans Lake and Platte River Greenway.
- 10th Avenue - Designate and sign as a bicycle route from Sheridan Boulevard to Decatur Street, and connect to Platte River Greenway via Decatur Street to both 13th Street and Weir Gulch.
- Virginia Avenue - Designate and sign as a bicycle route from Irving Street to the Platte River Greenway.
- Kentucky Avenue - Designate and sign as a bicycle route from Sheridan Boulevard to Zuni Street.
- Zuni Street - Designate and sign as a bicycle route from the north city limits to 46th Avenue.
- Clay Street - Designate and sign a bicycle route on Clay Street and Dunkeld Place, connecting the existing route on Clay Street from 33rd Avenue to the 29th Avenue route.
- 26th Avenue - Designate and sign a bicycle route from Eliot Street to Zuni Street, which connects with 15th Street.
- Eliot Street - Designate and sign as a bicycle route from 23rd Avenue to 20th Avenue, and continuing to 17th Avenue through the stadium parking area.
Proposed capital improvements include:

- Lakewood/Dry Gulch - Reconstruct from Sheridan Boulevard to the Federal Boulevard underpass as a non-circuitous, 10 foot concrete path, and connect to Platte River Greenway via improved 13th Avenue route.

- Weir Gulch - Reconstruct west of Barnum Park as a 10 foot concrete path. Continue route designation toward the east only if a grade separated crossing of 6th Avenue is constructed in the long range.

- 1st Avenue - Improve the connection of the Irvington Place bike route east of Federal with the 1st Avenue bike route west of Federal using a design to be developed during the Bicycle Master Plan implementation process.

- Westwood Trail - Complete current master plan and construct improvements from Perry Street to Zuni Street. Future improvements should include on-street linkages to Weir Gulch, Huston Lake Park, Sanderson Gulch, Platte River Greenway, Southwest Community Center, and Kepner Middle School.

- Sanderson Gulch - As a long term goal, replace the existing asphalt path with a 10 foot concrete path.

- 17th Avenue - Construct a separated bikeway from the southern end of Eliot Street route, along the east side of the northbound Federal exit ramp, to connect with the existing sidepath on the Colfax Viaduct.
NORTH SEGMENT RECOMMENDATIONS

In addition to the urban design improvements recommended for the entire Federal Boulevard corridor, the following recommendations are also applicable to the north segment.

URBAN DESIGN IMPROVEMENTS

Several illustrations are presented to show the effect of the recommended Urban Design Standards and Guidelines on portions of the north segment of the corridor. A photograph of existing conditions is included to provide a visual comparison.

NOTE: No Changes are recommended for the existing residential areas except for the addition of street trees where appropriate.

Existing Residential Area
North Segment
Neighborhood Commercial at 23rd Avenue (West Side)
Neighborhood Commercial
South of 26th Avenue (East Side)
Major Commercial Intersection
South of 38th Avenue (West Side)
Corridor Gateway
at I-70 (Southbound)
Strip Commercial
South of 52nd Avenue (West Side)
TRAFFIC AND SAFETY IMPROVEMENTS

The following additional safety improvements are recommended for the north segment of Federal Boulevard.

- **Relocate On-Street Parking.** On-street parking along the north segment of Federal Boulevard creates several conflicts in terms of both safety and use of available right-of-way. The outside travel lane becomes obstructed with vehicles maneuvering into and out of parking spaces and introduces pedestrians into the roadway, thus creating conflicts between both vehicles and pedestrians. The width of roadway required for parking necessitates either widening the roadway or utilizing sub-standard lane widths.

For these reasons, the existing on-street parking on the north segment of Federal Boulevard should be relocated to off-street replacement parking areas. These replacement parking facilities could occur gradually over time, based on the actual demand for parking and the availability of suitable locations.

At some specific locations along north Federal Boulevard, the potential exists to provide some recessed parking. However, it should be realized that recessing parking into the tree lawn area seriously degrades the quality of the boulevard image. This approach could be considered only where retention of on-street parking is needed and suitable off street parking alternative are not available. Figure 15, previously presented, illustrates how this concept could be incorporated into the recommended cross-section.
Median Development. The implementation of a raised median in the north segment of the corridor is recommended to occur between 52nd Avenue and Colfax Avenue.

Figure 19 shows the plan elements of the preferred cross-section. As shown, the raised median is extended along Federal Boulevard except at intersections with major cross-streets. At these locations, painted left-turn bays are provided.

Pedestrian crosswalks are provided at locations along the raised median to allow a point of refuge during crossing. As turning movements at minor cross-streets and driveways are restricted to right-turns only, pedestrians are afforded additional safety because they are not competing for gaps in traffic with left-turning vehicles. The specific streets which would be restricted to right turn movements only will be determined as a part of the preliminary design. However, to achieve the maximum safety benefits and to maintain a consistent median landscape, minor cross-streets should provide full turning movements only when a documented hardship exists.

Table 7 is a proposed list of the major cross streets where full turning movements would be maintained along with the anticipated type of traffic control. These locations may change during the detailed design process.

During detailed design it is suggested that a special access control plan be developed in the vicinity of the I-70 interchange. Such a control plan might include elimination of closely spaced and unsafe access points and possible signalization at 49th Avenue and 47th Avenue.

Future development proposals in the north segment of Federal Boulevard should reflect the urban design and traffic control intent of the Federal Boulevard corridor plan. Major redevelopment projects or other special situations may require the preparation of special traffic analysis, documenting the need for additional transit improvements, pedestrian facilities, and traffic safety and capacity requirements.
TABLE 7  
NORTH SEGMENT - POTENTIAL INTERSECTIONS WITH FULL TURNING MOVEMENTS RETAINED *

<table>
<thead>
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<th>Cross Street</th>
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<tr>
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<tr>
<td>50th Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>49th Avenue</td>
<td>Stop Signs E/W (Potential Signal)</td>
</tr>
<tr>
<td>I-70 North Ramp</td>
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</tr>
<tr>
<td>I-70 South Ramp</td>
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</tr>
<tr>
<td>47th Avenue</td>
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* Preliminary list for illustrative purposes; specific access control plan will be developed jointly by the city and state in design process.
SPECIFIC CROSS SECTIONS

Sports Complex Area

The portion of Federal Boulevard serving the sports complex extends from 20th Avenue to Colfax Avenue. A continuous urban design treatment is desired from Colfax north to I-70 to unify the corridor and better integrate the sports complex into the northwest Denver neighborhoods. A center median for this portion of Federal Boulevard may be appropriate but requires further analysis of the special traffic control requirements during major events. Police and traffic control personnel may need to open or close traffic lanes in direct response to short-term pedestrian or vehicle demands during peak arrival and departure periods associated with event traffic.

However, the portion of the corridor between the north Colfax ramps and 20th Avenue is recommended to be upgraded as shown in Figure 20(A). The auxiliary lane formed from the westbound to northbound ramp which ends at 17th Avenue would also be retained. The suggested improvements emphasize landscape and pedestrian enhancements and achieving standard lane widths while retaining the existing number of roadway lanes.

As subsequent studies are done for the entire sports complex area, an overall urban design plan will likely recommend additional improvements to this portion of Federal Boulevard. Also shown in Figure 20(B) is a potential long-range option which could be incorporated into other improvements for the sports complex to achieve the continuous urban design treatment desired for the entire north segment.

*ROW may be widened, if consistent with Sports Complex planning, to provide additional pedestrian facilities.
52nd Avenue to I-70

This portion of the corridor is distinctly different from the primary residential portion south of I-70 being primarily commercial in nature. In addition, existing developments along a portion of the east side of Federal Boulevard currently rely upon on-street parking for their business operations. Consequently, the cross-section shown in Figure 21 represents a long-term objective which is recommended to be phased over time as redevelopment occurs and alternative parking provisions become available.

![Diagram of 52nd Avenue to I-70]

I-70 to 20th Avenue

The preferred cross-section for this segment of the corridor (see Figure 22) responds to the unique residential character of the area. Both existing curb lines and right-of-way are recommended to be retained with extensive landscape enhancements provided throughout.

![Diagram of I-70 to 20th Avenue]
INTERSECTION IMPROVEMENTS

Conceptual intersection improvements have been identified for two locations in the north segment as described below. Precise intersection geometry will be developed during the design process. The following locations are recommended for capacity and safety improvements.

1. **Upgrade Federal/38th Avenue.** As previously discussed, this intersection is currently at or near capacity. Under future conditions, operations here are expected to be at LOS F unless intersection improvements are undertaken.

   An analysis of several improvement alternatives indicated that future operations at LOS E could be maintained by placing peak hour parking restrictions on the eastbound approach to the intersection as shown in Figure 23. This would effectively create a separate right-turn lane to southbound Federal Boulevard, thus increasing the capacity of the intersection at minimal expense. Parking restrictions could be lifted during off-peak periods, when the additional capacity would not be needed. It is therefore recommended that eastbound peak hour parking restrictions be implemented at this location.

   Operations at this intersection should continue to be monitored to determine if additional level of service improvements are warranted in the long term.
Upgrade Federal/Speer. The operational analyses also indicated that existing operations at this intersection are at LOS F, a condition requiring immediate improvement.

Further analysis has indicated that this intersection could be improved sufficiently to operate at LOS E through the projected year 2010 by adding a second westbound right-turn lane and a second southbound left-turn lane. In order to accomplish these additions and maintain lane continuity with minimal roadway widening, a reallocation of the existing widths of each roadway is required as shown in Figure 24.
SOUTH SEGMENT RECOMMENDATIONS

In addition to the urban design and safety improvements recommended for the entire Federal Boulevard corridor, the following recommendations are also applicable to the south segment.

URBAN DESIGN IMPROVEMENTS

Several illustrations are presented to show the effect of the recommended Urban Design Standards on portions of the south segment. A photograph of existing conditions is included to provide a visual comparison.
Street Trees

Planted median
where appropriate

Move curb
10', add 10' walk

Pedestrian
lights

Hedge planting

to screen parking

North of Mississippi Avenue (East Side)
South of Alameda Avenue (East Side)
TRAFFIC AND SAFETY IMPROVEMENTS

The following additional safety improvements are recommended for the south segment of Federal Boulevard.

1. Provide a Third Northbound Lane (Colfax to Jewell). The existing cross-section on the south segment of Federal Boulevard is unbalanced; it provides three southbound lanes but only two northbound lanes. The recommended cross-section would add an additional continuous northbound lane. While the additional lane is not a capacity requirement at most locations, this improvement has been recommended for two reasons.

First, the additional lane is needed as a right-turn acceleration/deceleration lane for the excessive number of accesses along this segment of Federal Boulevard. Turning vehicles entering and exiting the businesses along the east side of Federal Boulevard currently impede traffic flow and create a safety hazard. The addition of the third northbound lane will effectively remove these conflicts from the primary travel lanes.

The second reason that an additional lane is needed on northbound Federal Boulevard is the high frequency of transit traffic on this segment. As previously noted, over 300 buses per day serve some sections of south Federal Boulevard, which equates to as many as 12 buses per hour on the northbound side. Many bus stops currently occur in the right-hand through-lane, causing the traffic behind to stop. This situation increases delay and contributes to safety problems. The recommended third lane will allow transit operations, as well as right-turning movements, to occur efficiently without impeding the through movements on Federal Boulevard.
Median Development. The implementation of a raised median in the south segment of the corridor is recommended to occur between Colfax Avenue and Jewell Avenue.

Figure 25 shows the plan elements of the preferred cross-section for the south segment. The raised median is extended along Federal Boulevard except at intersections with major cross-streets. At these locations, painted left-turn bays are provided.

Pedestrian crosswalks are provided across the median to allow a point of refuge during crossing. Turning movements at minor cross-streets and driveways are restricted to right-turns only to afford pedestrians additional safety.

To provide all of the pedestrian, transit, and traffic improvements up to 10-feet of additional right-of-way would have to be acquired in those portions of the corridor having less than 100-feet of right-of-way.

The specific streets which would be restricted to right turn movements only will be determined as a part of the preliminary design. However, to achieve the maximum safety benefits and to maintain a consistent median landscape, minor cross streets should provide full turning movements only when a documented need exists. Table 8 is a proposed list of the major cross streets where full turning movements would be maintained along with the anticipated type of traffic control. Other locations may be added during the detailed design process.

The portion of the south segment between Jewell and Evans is recommended to continue to function as a transition between the upgraded cross-section north of Jewell and the existing cross-section south of Evans. The outside auxiliary lanes would end at Jewell with four through lanes continuing to the south with no raised median. Any future median construction or roadway improvements between Jewell and Evans should be coordinated with improvements south of Evans. Enhancement of the urban design character of this portion of the corridor should continue, however, and be coordinated with the landscape concept plan and pedestrian improvements to the north. Pedestrian and transit improvements are also recommended for Evans Avenue.
<table>
<thead>
<tr>
<th>Cross Street</th>
<th>Traffic Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>14th Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>Holden Place</td>
<td>Stop Sign WB</td>
</tr>
<tr>
<td>12th Avenue</td>
<td>Stop Sign EB</td>
</tr>
<tr>
<td>10th Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>9th Avenue</td>
<td>Stop Sign E/W</td>
</tr>
<tr>
<td>8th Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>7th Avenue</td>
<td>Stop Sign WB</td>
</tr>
<tr>
<td>South of 7th Avenue</td>
<td>Stop Sign WB</td>
</tr>
<tr>
<td>6th Avenue North Ramps</td>
<td>Signal</td>
</tr>
<tr>
<td>6th Avenue South Ramps</td>
<td>Signal</td>
</tr>
<tr>
<td>5th Avenue</td>
<td>Stop Sign EB</td>
</tr>
<tr>
<td>5th Avenue</td>
<td>Stop Sign WB</td>
</tr>
<tr>
<td>4th Avenue</td>
<td>Stop Sign WB</td>
</tr>
<tr>
<td>2nd Avenue - East</td>
<td>Signal</td>
</tr>
<tr>
<td>2nd Avenue - West</td>
<td>Stop Sign EB</td>
</tr>
<tr>
<td>1st Avenue - East</td>
<td>Stop Sign WB</td>
</tr>
<tr>
<td>1st Avenue - West</td>
<td>Signal</td>
</tr>
<tr>
<td>Bayaud Avenue</td>
<td>Stop Signs E/W</td>
</tr>
<tr>
<td>Alameda Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>Virginia Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>Exposition Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>Kentucky Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>Mississippi Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>Louisiana Avenue</td>
<td>Signal</td>
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<tr>
<td>Florida Avenue</td>
<td>Signal</td>
</tr>
<tr>
<td>Mexico Avenue</td>
<td>Stop Signs E/W</td>
</tr>
<tr>
<td>Jewell Avenue</td>
<td>Signal</td>
</tr>
</tbody>
</table>

* Preliminary list for illustrative purposes; specific access control plan will be developed jointly by the city and state in design process.
INTERSECTION IMPROVEMENTS

Conceptual intersection improvements have been identified for two locations in the south segment as described below. Precise intersection geometry will be developed during the design process. The following locations are recommended for capacity and safety improvements.

- **Upgrade Federal/Alameda.** Improvements to the Federal Boulevard/Alameda Avenue intersection are currently under final design as part of another project by the city and County of Denver. With these upgrades, this intersection should continue to operate below capacity to the year 2010, by which time the projected operations will be at an acceptable LOS E. Preliminary design of intersection improvements at this location include double left-turn lanes and three through-lanes on all approaches.

- **Upgrade Federal/Evans.** As previously discussed, the interactions between traffic, pedestrian, and transit operations at this important transit transfer station create undesirable conflicts which necessitate the following intersection improvements:

  To alleviate the condition of eastbound through and southbound left turn vehicles encountering delay due to buses stopping on eastbound Evans Avenue just east of Federal Boulevard, a bus pullout should be constructed to remove such transit operations from the travel lane.

  To prevent a similar conflict on the westbound leg of Evans Avenue, it is recommended that the inside westbound through-lane be reallocated to left-turning traffic. The existing configuration on westbound Evans Avenue forces two through-lanes to merge into one lane immediately west of Federal Boulevard. Therefore, the capacity of the intersection is not significantly affected by this action. The northerly lane on westbound Evans Avenue may then be used as a bus pullout and as a right-turn lane.

- **Jewell to Evans.** The six lane cross-section described in this section is applicable between Colfax and Jewell Avenue. The two-block segment between Jewell and Evans currently has four through lanes within a wider (68') street cross-section than the remainder of the south segment, therefore no changes to the cross-section of this segment are recommended. Any improvements to this segment, other than those at the Evans intersection, should be developed and incorporated with improvements that extend south of the study corridor.
VI. IMPLEMENTATION PROCESS

The implementation of the Federal Boulevard corridor plan as defined in the previous section of this document will likely be an extended process requiring a coordinated design process between the City and adjacent property owners, designation and allocation of financial resources, and acquisition of key rights-of-way.

To assist in developing an implementation framework, three elements of project implementation are presented in the following. These elements are:

- Project Phasing
- Planning Level Cost Estimates
- Agency Responsibilities (Funding, Construction, and Maintenance)

DESIGN PROCESS

This plan presents recommended improvement projects along Federal Boulevard at a generalized, planning level. As projects are funded, there will be a design process, which generally has three phases: preliminary design, final design and construction. The city Department of Public Works will include a public involvement process during each of these three phases, with a minimum of one open meeting during each phase. In addition, there will be a citizen steering committee formed if major issues of concern arise for a particular segment or project. Also, designers will work to address any particular property owners’ problems on a one-on-one basis.

There are a number of design issues that cannot be definitively addressed at the planning level, but that will be addressed during the design process. Included are the locations of median breaks for full movement intersections, location of pedestrian walkways, the location of pull-out parking bays in the north segment, design and landscaping in the medians, side landscape and streetscape design, and mitigation of construction and detour impacts.

PROJECT PHASING

Because the Federal Boulevard corridor encompasses nearly 8 miles with a variety of land uses, differing construction constraints, and right-of-way acquisition needs, it is not possible to define a specific phasing program. However, certain characteristics of the corridor are indicative of a general phasing sequence consisting of short-term actions occurring over the next 5 years; intermediate range actions to occur in approximately the next 3 to 10 years; and long-term actions to occur in the next 10 to 20 years.
SHORT-TERM ACTIONS (1 TO 5 YEARS)

Federal/Alameda Intersection

The upgrading of the intersection of Federal Boulevard and Alameda Avenue is currently underway. Engineering design will be completed in 1994 and construction is proposed to occur as soon as funding is in place.

Federal and 38th Avenue, Speer Boulevard, Evans Avenue Intersections

The improvement recommendations for the intersections of Federal/38th Avenue, Federal/Speer Boulevard and Federal/Evans Avenue have the following characteristics:

- Relatively minor right-of-way acquisition is required.
- Construction is limited to discrete locations.
- Total costs of these improvements are relatively small.

Therefore, these projects can proceed to design and implementation in a relatively short timeframe and should be considered as early corridor improvements.

INTERMEDIATE - TERM ACTIONS (3 TO 10 YEARS)

I-70 to 20th Avenue

This portion of the Federal Boulevard corridor involves relatively minor physical modifications having the following key characteristics:

- No right-of-way acquisition is required.
- Construction is limited to the center median and adjacent streetscape enhancements.
- Total costs are relatively small.

As a consequence this portion of the corridor is a likely candidate for early implementation and has, therefore, been identified as an intermediate improvement action.

20th Avenue to Colfax Avenue

This portion of the corridor is anticipated to be ultimately integrated with a larger effort to improve the overall pedestrian, traffic, and urban design characteristics of the sports complex area. Funding has been requested to proceed with landscape and streetscape enhancements along the edges of Federal Boulevard in the immediate time period. Planning for the sports complex area is anticipated to occur in the near future, with additional improvements sufficiently defined for implementation in the long-term time frame time period.
6th Avenue to Alameda

Unlike the north segment, the south segment involves major street reconstruction throughout and significant right-of-way acquisition in some areas, especially between Colfax Avenue and Alameda Avenue.

The segment of Federal Boulevard between 6th Avenue and Alameda Avenue exhibits several key characteristics, however, which warrant the consideration of this segment as an intermediate action project. These characteristics include:

- The intersection of Alameda and Federal is one of the highest accident locations in the City.
- Traffic volumes are the highest in the corridor and congestion levels are generally high especially at Alameda and Federal.
- Bus volumes through this segment are high as are passenger boardings.
- Overall pedestrian activity is significant as is the accident history.
- Right-of-way acquisition needs are generally 10-feet on one side of the street rather than 10-feet on both sides of the street.

In addition, the intersection of Alameda and Federal is currently being redesigned to improve safety and capacity with construction anticipated to be completed as soon as full funding is identified. Therefore, upgrading the segment of Federal Boulevard from 6th Avenue to Alameda Avenue would be a natural extension of these intersection improvements.

Alameda Avenue to Mississippi Avenue

This segment of Federal Boulevard is approximately 1 mile long and could be further subdivided into smaller projects consistent with city-wide priorities and available funding. However, since minimal right-of-way acquisition is required (except for the 1/2 block segment immediately south of Tennessee Avenue, where the existing ROW is only 80 feet), it is likely that significant portions of this segment could be implemented within a reasonable time frame and budget. Therefore, this segment is identified as an intermediate-term project.

LONG-TERM ACTIONS (10 TO 20 YEARS)

52nd Avenue to I-70

This segment of the corridor is identified as a long-term action because implementation of the ultimate cross-section will require redevelopment activities to occur and because safety and traffic operational problems are less significant than in other portions of the corridor.
20th Avenue to Colfax Avenue

As additional planning is conducted for the sports complex area it is anticipated that additional improvements will be identified for this segment of Federal Boulevard for implementation in the long-term time period.

Colfax Avenue to 6th Avenue

This segment of the corridor is characterized by some of the greatest safety, pedestrian, and congestion problems as well as some of the most significant cost and right-of-way constraints. As a consequence of these constraints, it is unlikely that all implementation issues can be resolved early although it is important that early steps be taken to begin the process of implementation.

The following characteristics of this segment of Federal Boulevard are significant:

- Bus volumes are the highest in the corridor and the largest passenger boarding area in the corridor is located in this segment.
- Accident occurrence including fatalities is among the highest in the corridor.
- Overall travel demand in this segment ranks as the second highest in the corridor.
- Nearly all of this segment requires 10-feet of additional right-of-way along both sides of the corridor and will involve resolution of issues associated with adjacent park lands.
- To connect this segment with the segment to the south would require reconstruction of the bridge over 6th Avenue which is a major cost component.
- The 2015 Regional Transportation Plan does not currently include an additional lane in this segment of Federal which means that a plan amendment must be initiated and approved before federal funding would be available.

Therefore, implementation of the improvements recommended for this segment of Federal Boulevard will likely occur later in the overall corridor upgrading due to the right-of-way and cost constraints. However, because the safety needs are significant, this segment may be advanced if right-of-way and cost issues can be resolved.

Mississippi Avenue to Jewell Avenue

This mile long segment of Federal Boulevard has similar characteristics to the segment between Alameda and Mississippi. Because the safety and operational characteristics of this segment are not as critical as other portions of the corridor, it has been identified as a long-term improvement action.
**PLANNING LEVEL COST ESTIMATES**

Precise cost estimates will not be known until the Federal Boulevard corridor plan proceeds into subsequent design stages. However, planning level cost estimates have been prepared for three primary construction elements and right-of-way acquisition. These planning level cost estimates are also allocated to each of the preliminary implementation phases and are shown in Table 9.

**TABLE 9**

**FEDERAL BOULEVARD PLANNING LEVEL COST ESTIMATES**
(Values are in 1,000's of 1993 Dollars)

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Location</th>
<th>Construction Element</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Landscaped Median</td>
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<td></td>
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<td>Streetscape</td>
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<td>Street Reconstruction</td>
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<td>Right-of-Way</td>
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<td>Phase Total</td>
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<tr>
<td>1 to 5</td>
<td>Federal/Alameda Intersection</td>
<td>-</td>
</tr>
<tr>
<td>Years</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>1 to 5</td>
<td>Federal Intersections at 38th,</td>
<td></td>
</tr>
<tr>
<td>Years</td>
<td>Spear &amp; Evans</td>
<td>-</td>
</tr>
<tr>
<td>1 to 5</td>
<td>I-70 to 20th Avenue</td>
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<tr>
<td>Years</td>
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<tr>
<td>1 to 5</td>
<td>20th Avenue to Colfax</td>
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<tr>
<td>Years</td>
<td></td>
<td>100</td>
</tr>
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<td>3 to 10</td>
<td>6th Avenue to Alameda</td>
<td>420</td>
</tr>
<tr>
<td>Years</td>
<td></td>
<td>1,250</td>
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<tr>
<td>3 to 10</td>
<td>Alameda to Mississippi</td>
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<tr>
<td>Years</td>
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<td>1,250</td>
</tr>
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<td>10 to 20</td>
<td>52nd Avenue to I-70</td>
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</tr>
<tr>
<td>Years</td>
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<tr>
<td>Years</td>
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<tr>
<td>10 to 20</td>
<td>Colfax to 6th Avenue</td>
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<tr>
<td>Years</td>
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<tr>
<td>10 to 20</td>
<td>Mississippi to Jewell</td>
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<tr>
<td>Years</td>
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<td>Corridor Totals</td>
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<td>16,420</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6,000</td>
</tr>
</tbody>
</table>

* The Federal/Alameda intersection improvements are contained within a larger project along Alameda Avenue extending from Knox Court to Decatur Street at a total cost of approximately $7.5 million.
AGENCY RESPONSIBILITIES

The Federal Boulevard corridor improvements will involve several public agencies responsible for various elements of project development, design and construction, and maintenance. Each of these responsibilities is outlined below.

FUNDING SOURCES

Private Property Owners

- Developer Agreements. When a property owner elects to redevelop a site, the City Department of Public Works evaluates the needed right-of-way, roadway, and landscape requirements and determines on a case-by-case basis what will be required of the developer. Where redevelopment occurs, it is reasonable to anticipate that developers will finance some to all of the needed improvements. The Federal Boulevard plan provides developers with specific requirements which pertain to their site.

- Local Improvement Districts. Often, minor road improvements and alley improvements are financed with local improvement districts. In these cases, a group of property owners agree to form a district and share in the financing. LID bonds are issued and repaid with an assessment on each property. This concept may also be applied to segments of arterial roads where there is a common interest among private property owners to finance needed improvements. The most likely portions of Federal Boulevard where this might occur are near Mile-High Stadium and north of I-70.

City and County of Denver

- Capital Improvements Fund. The City funds some capital improvements on a cash basis through its Capital Improvements Fund with revenues from the head tax. In recent years, funding through the Capital Improvements Fund has averaged between $4.5 and $12.5 million of its capital needs. Public Works projects have ranged between $50,000 and $1.5 million. Although the competition for these funds is significant, portions of the Federal Boulevard projects might be funded each year through this source or to provide local matches for federal funds.

- General Obligation (GO) Bond Projects. Every 7 to 10 years, the City typically identifies a number of potential large-scale capital projects for voter approval; the last election was in 1989. Voters are asked to approve or disapprove issuing general obligation bonds for "bundles" of capital projects. These bonds are repaid over time with property taxes. Road improvement projects, such as the 15th Street Viaduct, Speer/6th/Lincoln underpass and others have been financed with GO bonds. This is a viable source of funds for major components of the Federal Boulevard project. The next GO bond election date has not been set.
Community Development Block Grant (CDBG) Streetscape Projects. CDBG funds are from the federal government and are dispersed to local governments on a formula basis. For a number of years, Denver has earmarked about $500,000 of CDBG funds annually for streetscape projects within eligible neighborhoods. This level of funding typically finances 4 to 7 projects. Historically, these funds have been available for commercial or residential neighborhoods; in 1993, the City elected to earmark funds for only residential neighborhoods. This constraint might or might not be lifted in future years.

State and Federal Aid

A new piece of federal legislation, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), was signed into law in December, 1991. It describes how to access various types of federal aid for roads and transit. Several pertinent components of this new legislation are outlined below. Each year, it is the responsibility of the Metropolitan Planning Organization (MPO) which is the Denver Regional Council of Governments (DRCOG), to determine specifically how ISTEA funds are allocated among competing projects. The emphasis for this allocation is on cost-effectiveness based upon a quantitative evaluation of projects which are consistent with the Regional Transportation Plan. Typically, federal funds require a 20% local match which could be provided by Denver or CDOT.

The Surface Transportation Program (STP) is a new block grant type of program that may be used by States and local governments for any roads but locals or minor collectors. Once funds are distributed to States, each State must set aside 10 percent for safety construction activities and 10 percent for environmentally-related transportation enhancements. Since these funds are distributed on the basis of population, the Denver metropolitan area receives a substantial portion of these funds. Many portions of the Federal Boulevard project are designed to improve safety; these improvements should rank high for the safety construction set-aside funds. Other components of the Federal Boulevard project should be eligible for STP funding.

The Congestion Mitigation & Air Quality Improvement Program directs funds towards transportation projects in areas with high concentrations of ozone and carbon monoxide; the Denver metropolitan area qualifies. To the extent that Federal Boulevard improvements ease congestion and improve air quality, the project is eligible to compete for these revenues. However, significant reductions in air pollutant emissions would have to be demonstrated.

National Highway System (NHS) funds are available to facilities designated as a part of the National Highway System. Federal Boulevard is identified on the NHS submitted by the Colorado Department of Transportation to the Federal Highway Administration. As a consequence, improvements to Federal Boulevard would be eligible for NHS funds.
LAND DEDICATION AND ROAD CONSTRUCTION REQUIREMENTS

Developers (property owners) are required to dedicate any additional land that is needed to obtain one-half of the desired or planned right-of-way for existing roads when a building permit is pulled. The Denver Department of Public Works determines the desired or planned right-of-way to be taken.

Developers (property owners) are not required to improve property in the City right-of-way unless a building permit is pulled. However, when a building permit is pulled, developers (property owners) may be required to construct project-specific traffic and safety improvements, such as auxiliary acceleration, deceleration and turn lanes, detached or attached sidewalks, landscape improvements, drainage improvements, and access improvements and add street lights according to Denver’s standards. Developers (property owners) are typically not required to construct additional road pavement. On a case-by-case basis, Denver will relax some improvements requirements, such as landscaping, if the scale of the building or redevelopment improvements are modest. All of these conditions hold whether or not additional right-of-way is required.

LANDSCAPE CONSTRUCTION AND MAINTENANCE

Parkways

The City has submitted an application for the designation of sixteen parkways on the National Register of Historic Places. They include portions of: City Park Esplanade, Clermont Street, Downing Street, Forest Street, South Marion Street, Montview Boulevard, Richthofen Place, Speer Boulevard, University Boulevard, Williams Street, East 4th Avenue, East 6th Avenue, East 7th Avenue Parkway, East 17th Avenue and West 46th Avenue.

By Ordinance, the City has designated a number of roadways in Denver as parkways and boulevards. Federal Boulevard is among these. For designated parkways and boulevards, The City will trim trees within City right-of-way on a 7-year cycle and will remove hazardous conditions, such as dead trees.

The City Parks & Recreation Department generally assumes maintenance responsibility for improvements in the medians. Annual maintenance costs can vary greatly from one location to another but have averaged approximately $10,000 per mile. Abutting property owners are required to assume the maintenance responsibilities for improvements from the curb to the private property line. The City Forester assumes responsibility for street trees throughout the parkways.
Medians

The City Public Works Department generally installs landscaped medians. The City Parks & Recreation Department generally maintains landscaped medians. On occasion, other entities may be designated to maintain landscaped medians.

Edge Treatments, All Roads But Parkways

The City imposes landscape construction requirements on developers (property owners) when a building permit is pulled. On a case-specific basis, City staff will tailor the landscape requirements with the scale of the building permit pulled. These landscaped treatments must be "adequately maintained" but not necessarily improved with underground irrigation. The City’s guide in determining these landscape requirements is its "Streetscape Design Manual" which was adopted by the Planning Board earlier in 1993 and will be printed in a few months.

City code states that all property owners must maintain the City’s right-of-way between its private property line and the curb.

Community Development Block Grant Streetscape Projects

The Denver Commercial Streetscaping Program provides Community Development Block Grants up to $200,000 to revitalize and upgrade Denver’s older neighborhood shopping areas through the construction of right-of-way improvements. Special focus for this program is on neighborhood business revitalization areas or those areas with an established merchants or business organization. Benches, trees, ornamental pedestrian lighting, trash receptacles, sidewalks and curb ramps are all eligible improvements. Emphasis for project selection is placed on contributions from private sources that will be committed to complement these funds.

For a number of years, Denver has typically earmarked $500,000 annually for residential streetscape projects and $500,000 for commercial streetscape projects. In 1994 these funding levels will increase to $600,000. For example, Federal Boulevard at Tennessee and 38th Avenue between Federal & Jason are funded with CDBG funds.

Historically, the City funded projects in commercial or residential neighborhoods where residents are below a specified income level to qualify for funding.

Typically, residential neighborhood improvements include sidewalks, trees and sod. Commercial neighborhood improvements have been more extensive and have included pedestrian lighting, and irrigated landscaped treatments.

Before the City agrees to make streetscape improvements with its CDBG funds, it requires at least 70 percent of the property owners to agree to the following terms and conditions:

1. Purchase a revocable permit to install improvements other than trees and sod in the right-of-way edge ($75 in year one plus $25 each subsequent year).
0 Purchase liability insurance, if improvements are other than trees and sod.

0 Commit to maintain the irrigation system, including repair, annual drain and recharge.

0 Pay annual water and electric utility bills.

0 Commit to the general upkeep of the improvements, including maintenance and replacement of pedestrian lighting, trash removal, and tree trimming, as needed.

There are three ways that the CDBG landscaping is maintained:

0 A maintenance district, created for this purpose; examples include Morrison Road, and Santa Fe Drive between 6th and 14th.

0 A business improvement district, created for this and other purposes; examples include East Colfax Avenue between Broadway and York, the 16th Street Mall, and Cherry Creek North. BIDs are typically operated by an executive director, not City staff. Property owners finance the budget with assessments, fees, property taxes or a combination of these.

0 Individual property owners; examples include East 12th at Elizabeth in Congress Park, Federal at Kentucky, 3rd & Elati in the Baker neighborhood. This is an acceptable alternative only when the area of the improvements is so small that a maintenance district is not cost effective.

Parking Lots

The City imposes landscaping requirements on all parking lots, including free-standing revenue-producing lots as well as accessory parking lots. Often the private landscaping added to a commercial development are triggered by the City’s parking lot landscape requirements, not by street-related landscape requirements.

STREETSCAPE PROJECT EXAMPLES

South Broadway at First Avenue

This was among the first streetscape projects done with CDBG funds. A maintenance district finances the on-going maintenance and replacement costs.

East Colfax Avenue Between Broadway & York

The capital costs as well as the on-going operations and maintenance costs are financed by a business improvement district. A substantial portion of the capital costs were also funded by CDBG funds.
Santa Fe Drive Between 6th & 14th

The capital costs were financed with CDBG revenues. On-going operations and maintenance are financed via a maintenance district.

16th Street Mall

The original capital improvements were financed with federal funds associated with the transit improvements. For the first ten years (1982-1992) the on-going maintenance was financed by a maintenance district. In 1992, a business improvement district was formed to finance the on-going maintenance and operations in future years.

East Evans Avenue

These streetscape improvements were financed with general obligation bonds.

South 1600 Block of Pearl Street

These streetscape improvements were installed 10 years ago with CDBG funds and are maintained by a very active business association.

6th & Knox Court; 10th at Knox Court; East 12th at Elizabeth; Federal at Kentucky, Pearl & Kentucky, Etc.

These small streetscape improvement projects abut one or two properties. The on-going operations and maintenance are financed by the private property owners.

Morrison Road

Streetscape improvements have been completed in one area and two other areas are currently in design and will be installed with CDBG funds. A maintenance district will finance on-going operations, maintenance and replacement needs.

East Mississippi Avenue, East of Parker Road to Havana Street

Streetscape improvements in Denver are financed with the City’s CIP fund; improvements in Aurora are financed with a special improvement district. For landscaped maintenance, Denver provides the water tap and pays the monthly bill; the City of Aurora maintains the landscaped treatment.
CITY AND COUNTY OF DENVER
STATE OF COLORADO

Certification

I, Arie P. Taylor, Clerk and Recorder, Ex-Officio Clerk of the City and County of Denver, do hereby certify that the attached is a true and correct copy of Ordinance No. Series 1995

I have hereunto set my hand and affixed the Seal of the City and County of Denver, State of Colorado, this 17th day of February A.D. 1995

Arie P. Taylor
Clerk and Recorder, Ex-officio Clerk of the City and County of Denver

[Signature]
Deputy
BY AUTHORITY

ORDINANCE NO. 84
SERIES OF 1995

COUNCIL BILL NO. 52
COMMITTEE OF REFERENCE:
TRANSPORTATION

A BILL


WHEREAS, pursuant to the provisions of Section 41-18(c) of the Revised Municipal Code, and by Ordinance No. 617, Series of 1989, there has been approved a Comprehensive Plan for the City and County of Denver and

WHEREAS, said section of the Revised Municipal Code provides for the amendment of said Plan; and

WHEREAS, Ordinance No. 617, Series of 1989, provides for the incorporation of other documents into the Comprehensive Plan; and

WHEREAS, as a proposed part of the Comprehensive Plan, the Manager of Public Works has transmitted to the Mayor and Council for acceptance a proposed master plan for Federal Boulevard Corridor; and

WHEREAS, the Mayor has approved the same; and

WHEREAS, the Planning Board has approved the same; and

WHEREAS, the Federal Boulevard Corridor Plan was prepared with significant involvement of representatives of the various interests and has been approved by the same;

NOW, THEREFORE,

BE IT ENACTED BY THE COUNCIL OF THE CITY AND COUNTY OF DENVER:

Section 1. That the proposed master plan for the harmonious development of Federal Boulevard Corridor, consisting of a document
entitled "Federal Boulevard Corridor Plan", filed with the City Clerk, Ex-Officio Clerk of the City and County of Denver, on the 19th day of January, 1995, as City Clerk's Filing No. 95-0023, is hereby approved as part of the Comprehensive Plan, pursuant to Section 41-18(c) of the Revised Municipal Code, and Ordinance No. 617, Series of 1989.

Section 2. That the approval of the Federal Boulevard Corridor Plan, and of any subsequent amendment thereto, is intended to establish the same, in conjunction with the Comprehensive Plan, as the official guide for officials of the City and County of Denver and private citizens when making decisions affecting the future character of Federal Boulevard Corridor; provided, however, that such approval shall not preempt the decision making powers vested by law or the administrative directive in the Mayor, the Council or any other official of the City and County of Denver with respect to, but not limited to, a zoning map amendment, a zoning language amendment, a dedication or vacation of a street, alley or other public way, a designation of a park, the issuance of a revocable permit, a conveyance or the acquisition of real property by the City and County of Denver, of an appropriation for or construction of a capital improvement; and provided, further, that it is expressly understood that judgment must be exercised in the application of the Federal Boulevard Corridor Plan recommendations in the decision making processes of the Mayor, Council and other officials of the City and County of Denver.

PASSED BY THE COUNCIL
Deborah L. Dyer January 30 1995
- President

APPROVED: - Mayor January 31 1995
Michael Stayskal

ATTEST: - Clerk and Recorder,
Diane Pearson
EX-OFFICIO CLERK OF THE
CITY AND COUNTY OF DENVER

PUBLISHED IN THE DAILY JOURNAL Jan. 27 1995 February 3 1995
October 20, 1994

Deborah L. Ortega, President
Denver City Council
2525 16th Street, #214
Denver, Colorado 80211

Dear Councilwoman Ortega:

The purpose of this letter is to provide a Planning Board recommendation for adoption of the Federal Boulevard Corridor Plan.

The Planning Board held an information session on the Federal Boulevard Corridor Plan in June 1994, followed by a public hearing on the plan on August 17th. After consideration of the content of the plan, a description of the public involvement process throughout the study, and public comments received at the public hearing, the Planning Board voted on October 19th to recommend to City Council the adoption of the Federal Boulevard Corridor Plan as an amendment to the Denver Comprehensive Plan.

The Board further voted to urge City Council and the Public Works Department to aggressively pursue obtaining funding for various phases of the recommended improvement projects. The Board noted the significance of the deficiencies documented in the plan and the lack of major investments on Federal Boulevard in the past. We would like to see Federal Boulevard emphasized in capital improvements funding, in any future bond program that may be developed, and in applications for federal or state funding, so that the implementation schedule proposed in the plan can be met or accelerated.

Sincerely,

Ruth Falkenberg, Chairperson
Denver Planning Board

RF/