I-70B WEST

environmental assessment

Colorado Department of Transportation Region 3

March 2008

ENVIRONMENTAL ASSESSMENT

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and
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ENVIRONMENTAL ASSESSMENT

Prepared for:
U.S. Department of Transportation, Federal Highway Administration
and
Colorado Department of Transportation

Prepared by:
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March 2008

ACRONYMS AND ABBREVIATIONS

ADT	Average Daily Traffic
AMI	Average Median Income
AMP	Access Management Plan
APCD	Air Pollution Control Division
APE	Area of Potential Effect
AASHTO	American Association of State Highway and Transportation Officials
BMPs	Best Management Practices
CAA	Clean Air Act
CDBG	Community Development Block Grant
CDOT	Colorado Department of Transportation
CDOW	Colorado Division of Wildlife
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CO	Carbon Monoxide
COS	Corridor Optimization Study
CSS	Context Sensitive Solutions
db(A)	A-weighted decibel level
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FR	Federal Register
GVT	Grand Valley Transit

HCM	Highway Capacity Manual
HHS	Department of Health and Human Services
HUD	U.S. Department of Housing and Urban Development
IP	Industrial Pretreatment
IRIS	Integrated Risk Information System
LOS	Level of Service
MBO	Minority Business Office
MBTA	Migratory Bird Treaty Act
MESA	Phase I Modified Environmental Site Assessment
MOE	Measures of Effectiveness
MPO	Metropolitan Planning Organization
MSA	Metropolitan Statistical Areas
MSATs	Mobile Source Air Toxics
MVM	Million Vehicle Miles
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NLEV	National Low Emissions Vehicle
NO_X	Nitrogen Oxide
NPDES	National pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	Ozone
$PM_{2.5}$	Particulate Matter 2.5-Microns
PM_{10}	Particulate Matter 10-Microns
Pb	Lead

RIRO	Right-in/Right-out
RFG	Reformulated Gasoline
RPP	Regional Priority Plan
RTP	Regional Transportation Plan
RTPO	Regional Transportation Planning Office
SHPO	State Historic Preservation Officer
SO_2	Sulfur Dioxide
SRHP	State register of Historic Places
STIP	State Transportation Improvement Program
SWMP	Stormwater Management Plan
TIP	Transportation Improvement Program
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
DOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
VMT	Vehicles miles of travel
vpd	Vehicle Per Day
WHI	Weighted Hazard Index

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Executive Summary

The Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA) in coordination with the City of Grand Junction, Mesa County and the Regional Transportation Planning Office (RTPO) are considering improvements to the I-70B corridor in Grand Junction, Colorado (see **Figure ES-1**). The I-70B West study corridor is approximately four miles in length and extends from 24 Road on the west to 15th Street on the east. I-70B has many local names along its length, including US 6, US 50, 1st Street, Pitkin Avenue, and Ute Avenue (see **Figure ES-2**). The study corridor includes the highest traveled portion of I-70B and one of the most congested intersections in Grand Junction at 1st Street and Grand Avenue. The I-70B West study corridor also has daily traffic volumes higher than any other roadway in the western slope communities of Colorado. In addition, accident rates are higher along this segment of I-70B than the average rate for similar roadways in Colorado.

This Environmental Assessment (EA) has been prepared to evaluate the impacts of the proposed improvements to I-70B. Various alternatives, including the No Action Alternative, were considered and are described in Chapter 2. Based on comparative evaluation and public and agency comment, a Preferred Alternative was identified. The Preferred Alternative includes providing six lanes of through travel in the I-70B West study corridor, consolidating existing access points, improving several area intersections and the North Avenue interchange, providing improved and continuous bicycle and pedestrian facilities, and improving existing bus stops on I-70B.

Environmental impacts and mitigation measures associated with the Preferred Alternative are discussed in Chapter 3. No significant impacts were identified during the course of this study. Consideration of social, economic, and environmental issues was done in cooperation with a number of local, state, and federal agencies

Figure ES-1 I-70B West Regional Map

Figure ES-2 I-70B West Study Corridor

and with the public at large. Impacts as a result of construction of the Preferred Alternative include:

- Acquisition of 2.4 acres of right-of-way.
- Relocation of one business and minor loss of parking at nine businesses.
- Increase in impervious surface area of 4.5 acres, but no direct impacts to water resources such as the Colorado River, irrigation ditches, and other water bodies, or depletion of the Colorado River.
- Minor encroachment into existing floodplain area.
- Approximately 0.013 acre of permanent impacts to wetlands.
- Removal of some roadside vegetation.
- Acquisition of less than 100 square feet of the historic Whitman Park. This represents less than 1% of the total park area.
- Possible soil contamination could be found at adjacent gas siphons and fuel storage facility during construction.

Three public open houses, including a Spanish language meeting, were held during development of this EA, and numerous business owner meetings took place to ensure that interested citizens and businesses along the corridor had an opportunity to learn about and provide input on the project. In addition to the Spanish language meeting, outreach was conducted in Spanish through mailings, radio/tv/newspaper advertisements, and the project Web site.

A public hearing will be held during the 30-day public review period. The purpose of the hearing is to receive comments from the public on the I-70B West EA.

Prior to the public hearing copies of the EA will be made available for public review at area libraries and agencies. Display ads in local newspapers, radio announcements and new releases will announce the availability and location of the EA for review, and the date, time, and location of the hearing. This information will also be provided to the public through project postcards and on the project web site (www.dot.state.co.us/I70Bwest/).

Chapter 1: Purpose and Need

1.1 INTRODUCTION

The Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA) in coordination with the City of Grand Junction, Mesa County and the Grand Valley Regional Transportation Committee (the federally designated Metropolitan Planning Organization for the region) have identified a need for improvements to the I-70B corridor in Grand Junction, Colorado (see **Figure 1-1**). The I-70B West project is approximately 4 miles in length and extends from 24 Road on the west to 15th Street on the east as shown in **Figure 1-2**. This segment passes through the downtown area and provides access to regional retail uses west of downtown. I-70B has many local names along its length, including US 6, US 50, 1st Street, Pitkin Avenue, and Ute Avenue (see **Figure 1-2**).

The study corridor includes the highest traveled portion of I-70B and one of the most congested intersections in Grand Junction at 1st Street and Grand Avenue.

Within the study corridor, I-70B has a varying cross-section and purpose. I-70B is a four-lane roadway from 24 Road to 1st/2nd and Ute/Pitkin. This includes two lanes in each direction with varying provisions for a center turn lane. Through the southern part of downtown, I-70B splits into a one-way couplet. Traffic travels eastbound on Pitkin Avenue, which has three lanes between 2nd Street and 12th Street. Pitkin has two lanes beyond 12th Street. Traffic travels westbound on Ute Avenue, which has three lanes from 15th Street to 5th Street. Ute has two lanes of traffic west of 5th Street.

The study corridor includes the highest traveled portion of I-70B and one of the most congested intersections in

Figure 1-1 I-70B West Regional Map

Figure 1-2 I-70B West Study Corridor

Grand Junction at 1st Street and Grand Avenue. The I-70B West study corridor also has daily traffic volumes higher than any other roadway in the western slope communities of Colorado.

The western portion of the study corridor, from 24 Road to the 1st Street and Grand Avenue intersection, was originally constructed with adjacent frontage roads and numerous crossover accesses to serve adjacent properties. The commercial land uses in this part of the corridor have transitioned into higher traffic retail uses over time, which have resulted in traffic volumes and access needs inconsistent with the original frontage road system. The frontage road system with connections to I-70B every 500 to 700 feet does not meet modern access control design. As a result, traffic capacity is hampered, and accidents are higher than for similar roadways across the state.

The eastern portion of the study corridor, which includes the 1st Street and Grand Avenue intersection to 15th Street, is a primary route into and out of downtown. This area is characterized by numerous cross streets, one-way streets, on-street parking, residential and business driveways, and a higher level of pedestrian activity. This portion of I-70B is also characterized by a high level of traffic congestion during the peak travel periods. This congestion is highest where there is a high number of conflicting traffic flows, such as the intersection of SH 50 (5th Street) and I-70B (5th Street becomes SH 50 south of I-70B). SH 50 has high traffic volume traveling north/south where I-70B has a high level of traffic traveling east/west. SH 50 is the primary route for areas south of Grand Junction and beyond.

Sections 1.2 and 1.3 present the need for the project and provide a foundation for alternatives development and evaluation as part of this I-70B West Environmental Assessment (EA). This EA evaluates the options for improvements, including examination of the Purpose and Need for the improvements, alternatives under consideration, anticipated social, economic and environmental impacts associated with the project, and mitigation measures.

1.2 PURPOSE

The overall purpose of this project is to improve traffic flow, improve safety, improve multi-modal opportunities, and provide effective access along the I-70B West study corridor. This project is consistent with and included in the current Regional Transportation Plan (RTP), Statewide Transportation Improvement Program (STIP), and Transportation Improvement Program (TIP). I-70B also was the focus of a corridor optimization study (COS) prepared in 2004 for CDOT, Mesa County, the Grand Valley Metropolitan Planning Organization (MPO), and the City of Grand Junction. This study indicated that I-70B will need additional capacity during the study's planning horizon (2004 to 2030).

Project Purpose:

- *Improve traffic flow*
- *Improve safety*
- *Improve multimodal opportunities*
- *Provide effective access*

1.3 NEED FOR ACTION

I-70B is the backbone of the transportation system in Grand Junction. Its multiple functions include:

- Serving inter-regional SH 50 traffic from Montrose and beyond to Utah (I-70B and US 50 are coincident within most of the study area).
- Serving commuter traffic.
- Serving as a gateway to Grand Junction for tourists.
- Serving as a major arterial accessing regional employment centers including the downtown area.
- Serving other local land uses such as institutional facilities, recreational facilities, and neighborhoods.

With implementation of any proposed improvements along I-70B, the following problems should be addressed at a minimum:

- **Congestion** - Traffic flows approach capacity during peak periods and are expected to exceed capacity for several hours a day by 2030.
- **Safety** - Accident rates are higher along this segment of I-70B than the average rate for similar roadways in Colorado.
- **Access** - The spacing and configuration of existing access locations contribute to congestion and high accident rates, and reduce the ability to safely and effectively access adjacent properties.
- **Pedestrian, Bicycle, and Bus Facilities** - There are limited and discontinuous pedestrian, bike, and bus facilities in the study corridor.

The proposed improvements should, at a minimum accommodate the travel demand for the planning horizon of 2030.

1.3.1 Population and Employment Growth

Between 1990 and 2000 the population of Mesa County grew by 25%[1]. Forecasts by the Mesa County Regional Transportation Planning Office (RTPO) indicate growth from 2000 to 2030 will be 76%. Considering historical growth patterns, Grand Junction will experience similar population growth.

Specific to the study corridor, real estate development and redevelopment has occurred at a high level. This historic growth is expected to continue as the need for goods and services increase with population growth.

Over the last 15 years, Grand Junction and Mesa County have experienced strong employment growth. According to the Grand Junction Economic Partnership, Grand Junction's labor force is now the sixth largest in Colorado and represents a regional economic hub for the western slope of Colorado and parts of eastern Utah. The Demography Office of the Colorado Department of Local Affairs forecasts a labor force of 120,344 in Mesa County by 2030. This is more than double the labor force in 2005 (66,747).

1. Mesa County Web site. March 2007. http://www.mesacounty.us/about_mesa_county.aspx

Population and employment growth is expected to continue, exacerbating congestion and safety concerns along I-70B. In order to safely and efficiently handle forecasted population and employment growth, capacity improvements, safety improvements, and standardized access requirements will be necessary.

Population and employment growth is expected to continue, exacerbating congestion and safety concerns along I-70B.

1.4 CONGESTION

In 2030, daily traffic volumes on I-70B from 24 Road to North Avenue are forecasted to increase by as much as 30% (see **Figure 1-3**). This equates to daily traffic volumes as shown in **Figure 1-4**. This increase in forecasted travel demand will exceed the capacity of the existing four-lane roadway resulting in congested conditions.

By 2030, traffic volumes along I-70B west of North Avenue cannot be adequately accommodated by the existing four-lane roadway.

Nearby to I-70B, the City of Grand Junction is constructing Riverside Parkway. This facility, expected to open late 2008 will provide an alternative route for some regional traffic currently using I-70B, as illustrated in **Figure 1-5**.

I-70B will still serve regional and local traffic patterns in western Grand Junction. This includes the truck and delivery needs for businesses in the corridor. By 2030, traffic volumes along I-70B west of North Avenue cannot be adequately accommodated by the existing four-lane roadway.

South and east of North Avenue along I-70B, traffic volumes are forecasted to increase by up to 17% depending on the location. The completion of Riverside Parkway is responsible for the lower growth in traffic south of North Avenue. Roadway sections in this area have forecasts approaching 30,000 to 35,000 vehicles per day (vpd) and are characterized by an urbanized downtown setting with high turn volumes. Even with the lower level of growth in this area of I-70B due to Riverside Parkway, I-70B will be congested in this area.

Figure 1-3 Daily Traffic Volume Increases 2006 through 2030

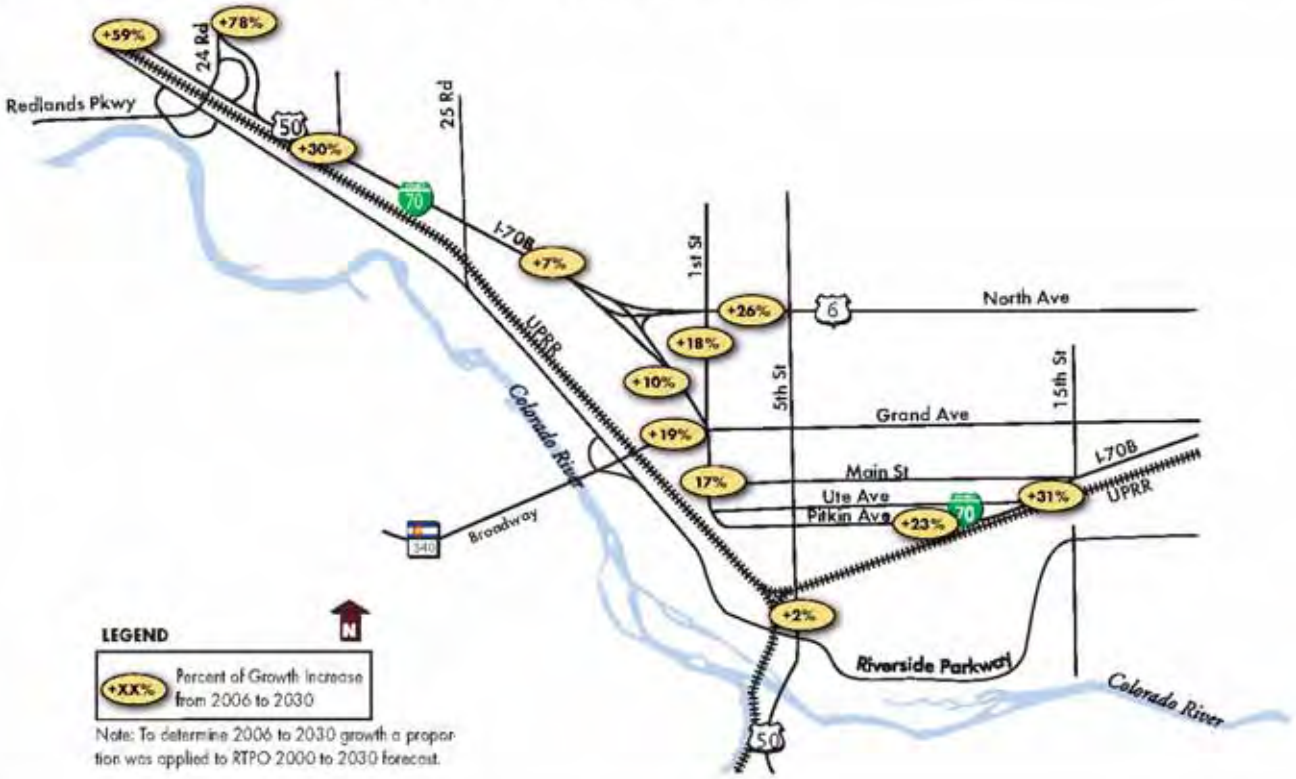
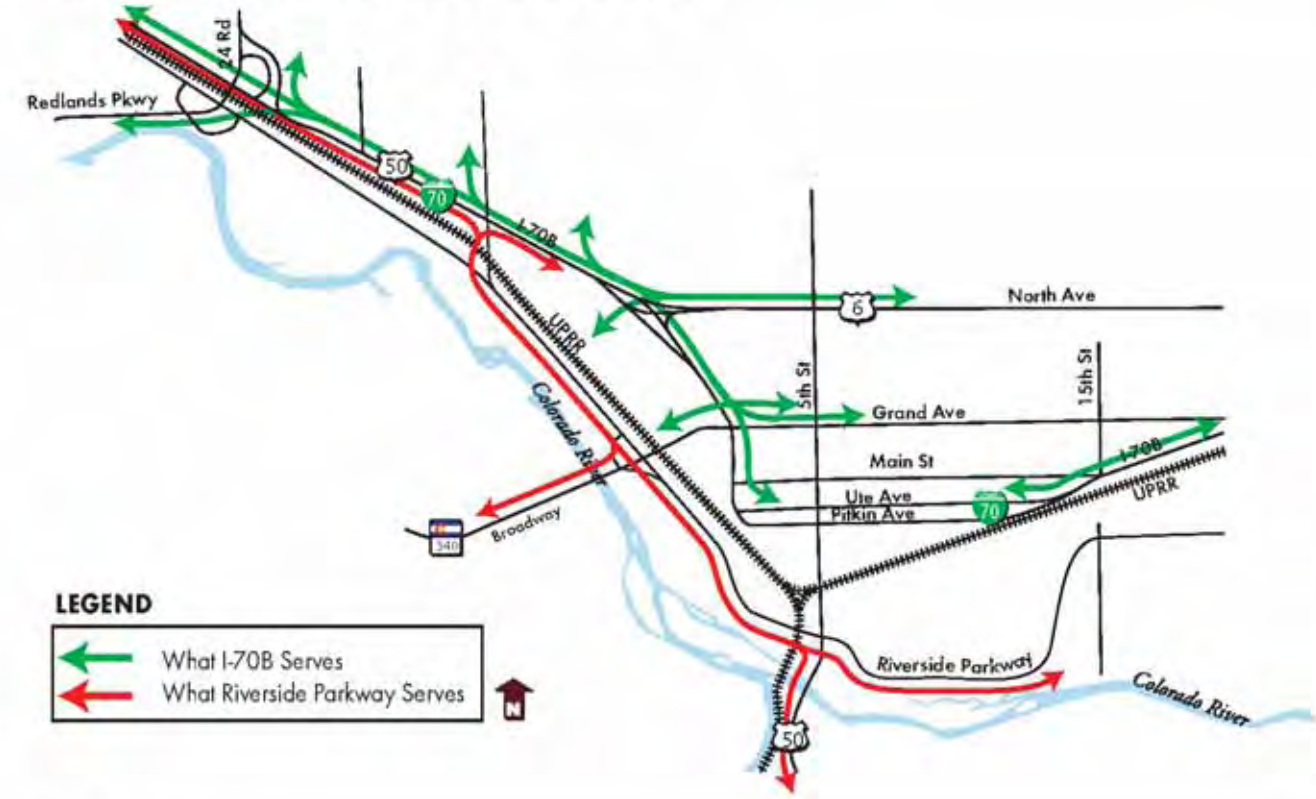


Figure 1-4 2006 & 2030 No Action Alternative Average Daily Traffic (ADT)

Figure 1-5 Traffic Patterns with Riverside Parkway



Given the forecasted population and economic growth for the region, and the resulting traffic growth, congestion and delay will worsen along the I-70B study corridor. Intersections between 24 Road and the 1st Street and Grand Avenue intersection are expected to have unacceptable traffic conditions (LOS E and F) during the future 2030 PM peak period. The intersection of 5th and Pitkin is also expected to have unacceptable traffic conditions during the PM peak period. **Figure 1-6** describes the different levels of service (LOS). In urbanized areas, most travel delay occurs at intersections. LOS is a measure of average vehicle delay incurred at an intersection. The I-70B West Corridor is consistent with this characteristic. Analyses of LOS were conducted in accordance with the *Highway Capacity Manual 2000*. **Figure 1-7** displays the existing and forecasted LOS for the I-70B intersections. LOS E and F are both considered unacceptable with LOS E being defined as at-capacity, and LOS F typically described as failing.

To address this congestion need, the proposed improvements should, as a minimum, provide acceptable intersection traffic operations (LOS D or better) throughout the study corridor. However, since congestion is only one of four identified project needs, the level to which this need is addressed must also be balanced with the other project needs.

Figure 1-6 Level of Service Definitions

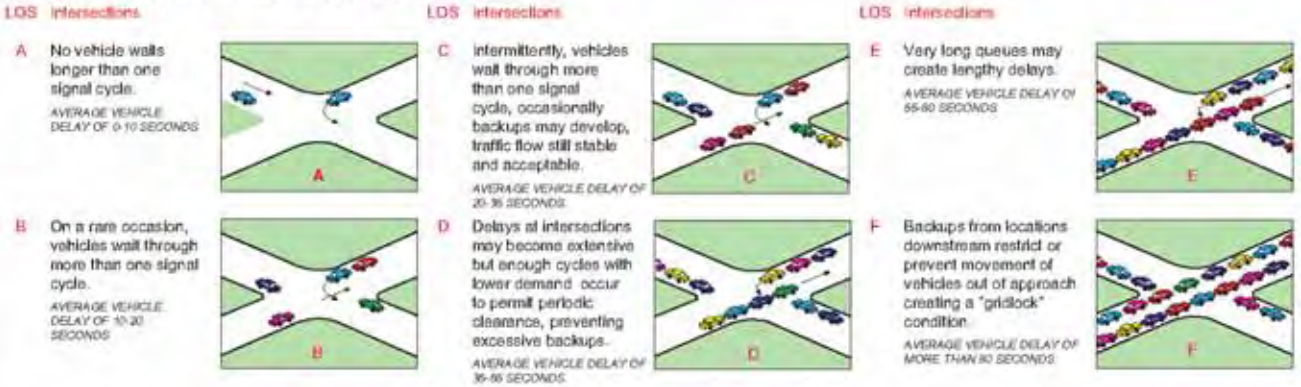
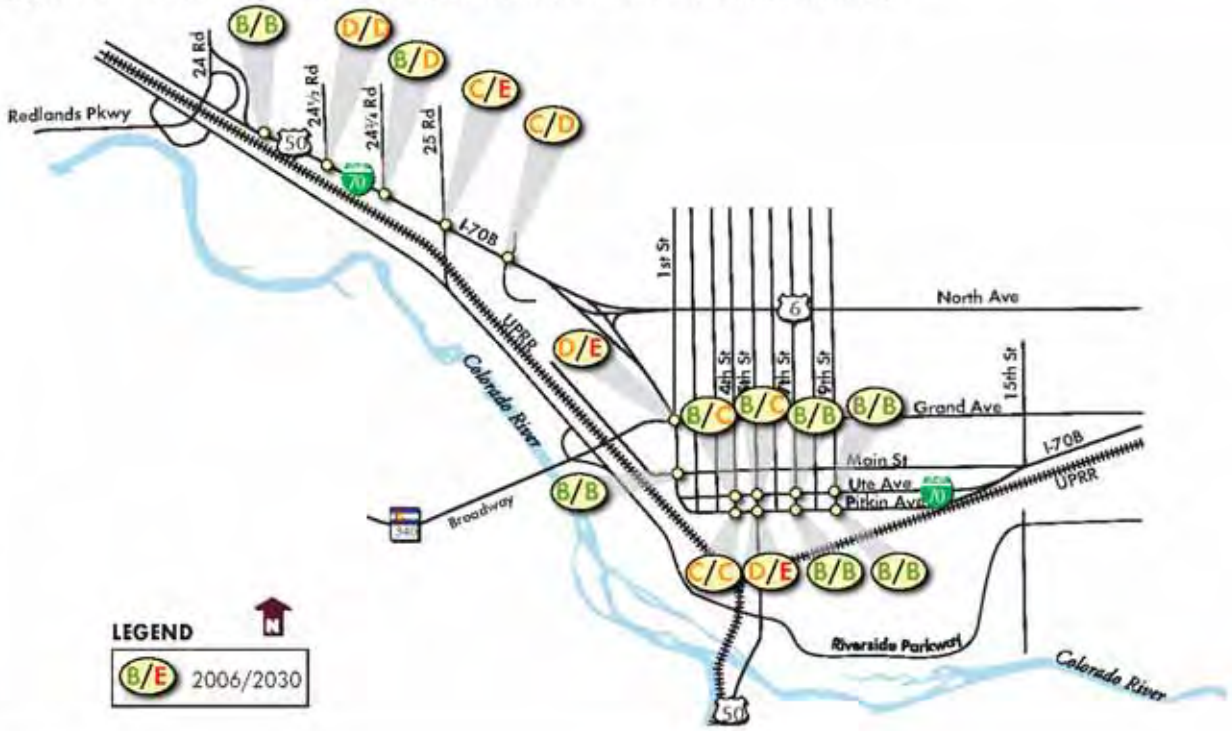


Figure 1-7 Existing and Forecasted Intersection LOS, PM Peak Hour



1.5 SAFETY

Within the study corridor, average accident rates are higher than for similar roadways in Colorado (see **Figure 1-8**). Accident data for the most recent three-year period (through 6/2006) were obtained from CDOT, Grand Junction and Mesa County. This data shows that for the section of I-70B between 24 Road and North Avenue, the average accident rate of 5.5 accidents per million vehicle miles traveled (APMVMT) is 10% higher than the statewide average. The section of I-70B between North Avenue and the one-way couplet has an average accident rate of 8.4 APMVMT - 68% higher than the statewide average. The section of I-70B from the west end of the one-way couplet to15th Street (through downtown), has an average accident rate of 7.5 APMVMT-50% higher than the statewide average. The corridor, as a whole, has a weighted average accident rate of 6.47 APMVMT - 29% higher than the statewide average of 5.00 APMVMT.

Within the study corridor, accident rates are higher than for similar roadways in Colorado.

The average injury rate for the I-70B West study corridor as a whole is 1.72 injuries per million vehicle miles traveled - 60% higher than the statewide average for similar corridors (1.07 injuries per million vehicle miles traveled). Since the injury accident rate exceeds the state-

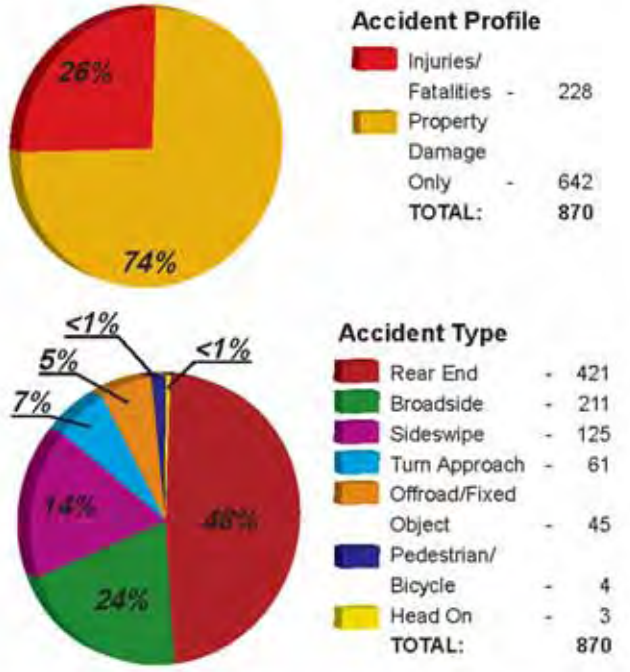


Figure 1-8 Study Corridor Accident Locations and Rates (3 Year Average)

* For some functional type roadways the 3-year average accident rate is 5.00 accidents per million vehicle miles traveled (APMVMT)
Sources: Colorado Department of Transportation, City of Grand Junction, Mesa County

wide average more than the average accident rates exceed the statewide average, accidents that do occur in the corridor are likely to be more severe than average.

A contributing factor to the high accident rates is the high number of vehicle conflict points associated with intersections and driveways. These conflict points are most often associated with the rear-end accident type. Rear-end accidents often occur when vehicles stop or slow down in the through travel lane. These stopping or slowing vehicles could be a result of the intersection control (signals), or turning into and out of access points (driveways and streets). For comparison, accident rates drop substantially west of 24 Road and east of 15th Street where there are fewer intersections and driveways per mile.

To address this safety need, the proposed improvements should, as a minimum, provide safety improvements that have a high likelihood of reducing accident rates to average or better. However, since safety is only one of four identified project needs, the level to which this need is addressed must also be balanced with the other project needs.

1.6 ACCESS

I-70B falls under two access control classifications per CDOT's State Highway Access Code. Between 24 Road and the 1st Street and Grand Avenue intersection, I-70B is classified as an Expressway (E-X) and from the 1st Street and Grand Avenue intersection to 15th Street as a non-rural Regional Highway (NR-A). Both of these classifications call for access points to be further apart than currently exist. Limiting access better accommodates efficient regional traffic mobility over long distances at higher and consistent speeds. This regional mobility is one of the objectives of the Expressway and non-rural Regional Highway classifications. Limiting the number of access locations can also help reduce the number of conflict points, improve safety and improve traffic flow. This EA provides more definition as to the anticipated and proposed access along I-70B in the study area.

Access to local businesses and land uses is one of the functions I-70B serves. Access is extremely important to businesses and other land uses along I-70B, yet directly affects both the congestion and safety needs described above.

One of the most dangerous issues related to the business access is the existing frontage road that exists for portions of I-70B between Independent Avenue and 24 Road. This frontage road is located in close proximity and parallel to I-70B, making maneuvers between the two roadways dangerous. Visual inspections of the traffic operations between the two facilities indicate unexpected conflicts and dangerous conditions. These unexpected conflicts occur because these intersections typically have more approaches and the approaches are often parallel to each other, becoming hard to see for many drivers. Another safety concern is the conflicts between the turning traffic at numerous access points and through traffic movements. This occurs at many locations within the entire corridor.

Considering the number of accesses and the frontage road conflicts, careful attention must be given to access in order to provide safe and effective movement of traffic while also addressing the important I-70B function to serve local access.

To address this access need, the proposed improvements should, as a minimum, provide access control along I-70B that is effective in protecting the safety, traffic operations, and the assigned functional purpose of I-70B while providing access to adjacent properties. However, since access is only one of four identified project needs, the level to which this need is addressed must also be balanced with the other project needs.

1.7 PEDESTRIAN, BICYCLE, BUS FACILITIES

Discontinuous pedestrian, bicycle and bus facilities, resulting in limited use, unsafe conditions, and increased automobile travel.

Currently, the I-70B West study corridor lacks adequate pedestrian, bicycle, and bus facilities. Facilities that do exist are discontinuous. This lack of infrastructure and connectivity creates a safety concern for those using transit and other modes of travel. Interviews with business owners and residents confirm that trips that could be taken by foot, bike, or bus, are not being taken due to lack of infrastructure and unsafe conditions. Specific problems include:

- West of Rimrock Avenue, the study corridor lacks sidewalks of any kind.

- Absence of designated pedestrian crossings of I-70B between 24 Road and Rimrock Avenue.
- Absence of designated pedestrian access between the train station and the core downtown area.
- Pedestrian access to Whitman Park is substandard; crossing signals and crosswalks do not provide adequate separation between pedestrians and vehicles.
- Most signalized intersections lack adequate pedestrian safety devices, including signals and crosswalks.
- Safely biking along the corridor is not possible, due to the absence of sidewalks and designated bike paths or lanes and the predominantly narrow shoulders.
- Due to the absence of sidewalks in much of the corridor, and predominantly narrow shoulders with no additional bus pull-out space, bus stops along the corridor are inherently unsafe, which contributes to poor transit use.

To address this need, the proposed improvements should as a minimum, provide for continuous bicycle and pedestrian facilities along I-70B (including frequent, safe crossing) and accommodate all existing and future bus operations. However, since bicycle, pedestrian, and bus facilities are only one of four identified project needs, the level to which this need is addressed must also be balanced with the other project needs.

1.8 CONCLUSION

This project must address the needs for the I-70B study corridor by "best" addressing known congestion problems, known safety problems, known access problems, and known problems with bicycle, pedestrian, and bus facilities.

Improvements to I-70B from 24 Road to 15th Street are needed to address the concerns identified by the project purpose and documented in the project need. These specifically relate to congestion, safety, access management, and pedestrian, bike, and bus facilities. As population and employment grow, the need for capacity improvements, safety improvements, access management, connected bike/pedestrian facilities, and bus facilities will be necessary to achieve the Purpose and Need of the project.

To address these needs, the proposed improvements should provide acceptable intersection traffic operations (LOS D or better) throughout the study corridor; provide safety improvements that have a high likelihood of reducing accident rates to average or better; provide access control along I-70B that is effective in protecting the safety, traffic operations, and the assigned functional purpose of I-70B while providing access to adjacent properties; and provide for continuous bicycle and pedestrian facilities along I-70B and accommodate all existing and future bus operations.

This EA describes the process followed to evaluate alternatives and identify a Preferred Alternative for the I-70B West project, and to assess associated impacts. The alternatives development and evaluation process is described in Chapter 2. Chapter 3 describes the affected environment and environmental consequences associated with the Preferred and No Action Alternatives carried forward, and mitigation measures for the Preferred Alternative. Chapter 4 describes the public and agency involvement process.

Chapter 2: Alternatives

2.1 INTRODUCTION

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) requires that a range of alternatives be evaluated and reasonable alternatives (including a No Action Alternative) be considered and evaluated at comparable levels of analysis. The CEQ has defined reasonable alternatives as those that are practical and feasible from a technical and economic standpoint and which achieve the Purpose and Need for the project.

This chapter describes the process used to identify reasonable alternatives for the proposed improvements to I-70B. This information is summarized from the *I-70B West Alternatives Development and Screening Report* (Carter & Burgess, 2006).

2.2 COORDINATION AND INVOLVEMENT PROCESS

Agency coordination and public involvement activities were specifically planned to be open, inclusive, and ongoing throughout the Environmental Assessment (EA) process. This process was designed to respond to the high level of interest within the community particularly from businesses concerning the future of the I-70B West Corridor.

The process included numerous outreach activities to ensure a high level of public awareness of the project and a wide range of opportunities for public input, review, and comment. These activities included agency and public scoping meetings, public open house meetings, agency briefings, small group meetings with interested businesses and organizations, project mailings, a project link on the Colorado Department of Transportation (CDOT) Web site, advertisements, and a media information program. In addition, a 30-day public and agency review period and public hearing will follow publication of the EA. For detailed information regarding the process conducted for this EA, see Chapter 4: Comments and Coordination. Further information about this process as it relates to the NEPA scoping process is presented in the next section.

2.3 NEPA SCOPING PROCESS

The scoping process included meetings with stakeholders, resource agencies, local agencies, business groups, and the general public. The meetings were to discuss project needs and goals, possible alternatives, the evaluation of alternatives, issues such as impacts to the community, and other project concerns (See Chapter 4 for more information). Input was obtained by a variety of means and considered in the development of alternatives:

Public Meetings — Two general public open houses were held during key points in the project in order to provide input back to the Project Team. The first meeting, a public scoping meeting, was held at the First Congregational Church - Pilgrim Hall on September 28, 2006. This meeting established public consensus on the needs and goals identified for the project. The second meeting was held at Two Rivers Convention Center on January 24, 2007. This second meeting both established consensus on the alternatives developed for the project and allowed the public to provide input into the design, especially the location and layout of business access. Information presented at these public meetings relevant to the alternatives development and screening process is contained in the *I-70B West Alternatives Development and Screening Report.*

Spanish Language Public Meeting — Outreach to the Hispanic community included a Spanish Language public meeting at St. Joseph's Parish Hall on November 16, 2006. Input was gathered from the Hispanic community, and public consensus on the alternatives and screening evaluation was established. Additional outreach to minority and low-income populations is detailed in Section 3.3.4.3, Environmental Justice - Specialized Outreach.

One-on-One Meetings with Individual Property Owners and Tenants — Numerous meetings were held as potential alternatives and improvements were being defined to gather input on detailed business operations resulting in modifications to access alternatives and a collaborative solution for businesses throughout the corridor. Meeting summaries are contained in the *I-70B West Alternatives Development and Screening Report.*

Web site — A Web page was designed as a link on the CDOT Web site in order to provide real-time access to project progress. The Web site address is: http://www.dot.state.co.us/i70bwest/. Few comments on the project were received through the website.

Resource Agency Scoping Meeting — This meeting was held on September 28, 2006, with the local, state, and federal agencies that have a regulatory responsibility for various resources, such as wetlands, historic properties, endangered species, and water resources. The purpose of the meeting was to identify potential impacts to these resources in the study corridor. Additional follow-up coordination meetings were held as needed and input was also provided via email, letters, and telephone conversations.

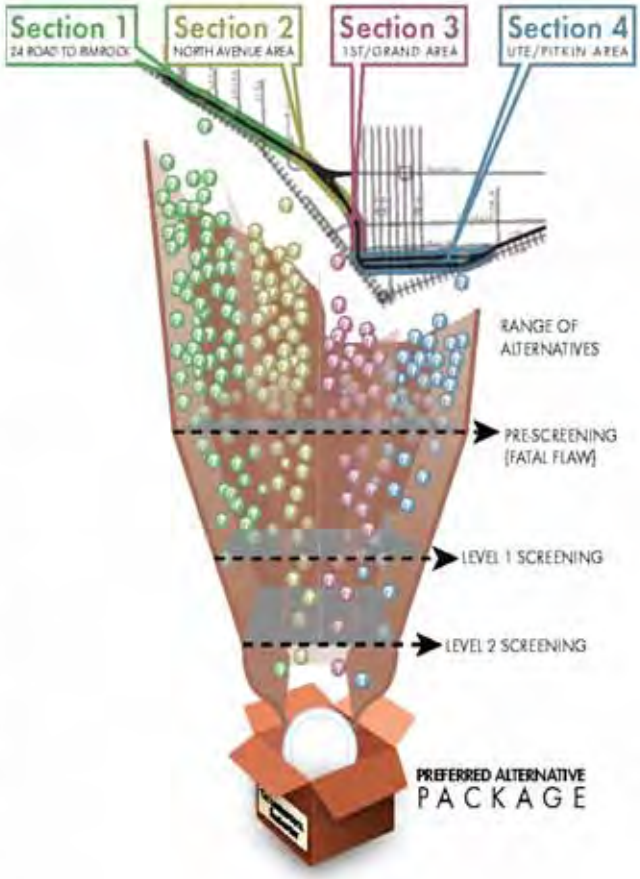
2.4 ALTERNATIVES DEVELOPMENT AND EVALUATION PROCESS

The alternatives presented in this chapter were developed based on input from the NEPA scoping process and in coordination with the Project Team, including the consultant, the Federal Highway Administration (FHWA), the Colorado Department of Transportation (CDOT), the City of Grand Junction (the City), and Mesa County (the County). Each of the members of the Project Team, as well as the public, was integral from the development of the initial alternatives through the completion of the EA process. The sequence of steps followed to develop alternatives and then "screen" and refine them to those evaluated in this EA are described in the following subsections, and are summarized below and in **Figure 2-1**.

Evaluation Process:

1. Project evaluation criteria and measures of effectiveness were developed based on the Purpose and Need for the project, project goals, and design guidelines.
2. It was determined that different types of alternatives were needed in different parts of the corridor, so the corridor was divided into the four sections shown in **Figure 2-1**. Section 1 alternatives focused on access, additional lanes, and sidewalk/trail connectivity to address, safety, capacity, and bike/pedestrian needs. Section 2, 3, and 4 alternatives focused on lane consistency and intersection improvements to address capacity and safety needs.
3. A range of alternatives was pre-screened to eliminate those that would not meet the Purpose and Need and those that had potentially fatal flaws.
4. An initial comparative screening (Level 1) was conducted on the remaining alternatives to identify those alternatives that were most practical or feasible from a technical, economic, and environmental standpoint. Evaluation criteria and measures of effectiveness (MOE) were used at a qualitative level for this stage of alternatives screening to reduce the number of alternatives.
5. The remaining alternatives were then evaluated and compared with each other through a second and more detailed level of comparative screening (Level 2) to arrive at the Preferred Alternative evaluated in the EA.

Figure 2-1 Alternatives Evaluation Process



2.4.1 Project Goals

Twelve project goals were developed to guide the alternatives development and evaluation process. These include goals that support and go beyond the basic needs of the project plus goals that are viewed as crucial to the success of the project by the stakeholders. While the needs must be addressed by the project, the goals provide a framework by which the proposed improvements can exceed those requirements. The goals identified for this project are:

- Provide the most efficient traffic operations that can be achieved feasibly.
- Meet transportation safety needs of all users - auto, truck, bus, pedestrian, and bicycle.
- Provide effective access for existing and future economic development while maximizing mobility.
- Accommodate the needs of truck freight.
- Provide an environment friendly for buses, pedestrians, and bicycles.
- Be consistent with adopted plans, including land use, transportation, adopted zoning, key corridors, and community gateways.
- Avoid and minimize adverse impacts to, and where possible enhance, the natural, cultural, and human environment.
- Provide practical and financially realistic transportation improvements.
- Avoid and minimize right-of-way impacts and relocations to commercial and residential properties.
- Continue to function as an important link in the regional, state, and national highway system.
- Provide and accommodate appropriate way-finding for travelers to and through the Grand Valley.
- Incorporate Context Sensitive Solutions (CSS) into the planning and design. CSS is a collaborative, interdisciplinary approach that includes all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources while maintaining safety and mobility. For I-70B, CSS would involve addressing community based issues such as urban design and aesthetics while recognizing the differences in each section of the project area.

2.4.2 Project Evaluation Criteria and Measures of Effectiveness

In order to objectively and fairly compare potential alternatives, six evaluation criteria were selected to reflect the Purpose and Need and the project goals. For each criterion, a series of performance measures, or MOE, were written to provide the basis for comparative evaluation of alternatives.

The MOE were applied to the various transportation improvement options, as appropriate, for the information available at each level of screening. The MOE also were applied, as appropriate, for the information that would show differences between the improvement options at each level of screening. The evaluation criteria are listed below and in **Table 2-1**, along with the MOE for each criterion.

- **Travel Demand** addresses how well each potential alternative accommodates the efficient movement of people, goods, and services throughout the study corridor.
- **Safety** addresses how each potential alternative affects the safe movement of people, goods, and services through the study corridor.
- **Access** addresses the impact of each potential alternative on access to corridor businesses.
- **Multimodal** addresses the use of the corridor by pedestrians, transit users, bicyclists, and users of other mode choices.
- **Environmental** addresses the degree to which potential alternatives impact the natural, cultural, and human environment.
- **Implementation** addresses the degree to which an alternative is cost-effective and practical to construct.

Table 2-1 Evaluation Criteria and Measures of Effectiveness

MOE	Travel Demand
1	Ability of alternative to meet desirable design standards
2	Ability of alternative to address travel demand needs (capacity)
3	Ability of alternative to provide acceptable operations (LOS D)
4	Ability to accommodate regional through travel
MOE	**Safety**
1	Ability of alternative to reduce or eliminate configurations that create undesirable conflicts at high accident locations
2	Ability to reduce number of potential vehicle conflicts
3	Relative safety characteristics of alternative access control
MOE	**Access**
1	Ability of the alternative to provide customer ingress to properties (or visitor ingress to residential properties)
2	Ability of the alternative to provide customer egress from properties (or visitor egress from residential properties)
3	Ability of the alternative to provide good geometrics for truck access to properties (if required for ingress and egress)
4	Ability of the alternative to minimize out-of-direction travel for truck access to properties (if required)
5	Relative ability of alternative to accommodate good wayfinding to properties along I-70B
MOE	**Multi-Modal**
1	Ability of the alternative to provide good pedestrian and bicycle flow
2	Ability of the alternative to improve bus operations
MOE	**Environmental**
1	The alternative's avoidance, minimization or enhancement to or detraction from the quality of environmental resources
2	Relative right-of-way impacts (business) based on number of acquisitions, number of impacts, and total area
3	Relative right-of-way impacts (residential) based on number of acquisitions, number of impacts, and total area
MOE	**Implementation**
1	Relative cost of the alternatives
2	The degree to which the alternative complies with local plans and policies
3	Relative construction impacts
4	Ability to phase construction into fundable construction packages

Note: MOE apply to all state and local systems within the study corridor.

2.5 ALTERNATIVES ANALYSIS

The following sections provide a summary of the alternatives evaluation process resulting in a Preferred Alternative for evaluation in this EA.

2.5.1 Fatal Flaw Analysis (Pre-screening)

For each section of the I-70B West Corridor, alternatives were pre-screened to avoid consideration of potential improvements with "fatal flaws." Fatally flawed alternatives are those that are clearly unrealistic or that have no reasonable chance of being implemented. The following fatal flaw screening criteria were used for the I-70B West alternatives:

- Exorbitant cost
- Legal/logistical infeasibility (i.e., can't obtain required permits)
- Unproven technology
- Engineering infeasibility (i.e., can't be built)
- Clearly unacceptable environmental impacts
- Clearly unacceptable community impacts
- Non-responsive to Purpose and Need (see Chapter 1)

The following alternatives were screened out as a result of fatal flaw analysis:

Widening of I-70 to the north (not I-70B)

- Not responsive to Purpose and Need as it would not address congestion on I-70B

Convert I-70B to two-way Pitkin through downtown

This alternative may meet different needs as identified in Downtown Redevelopment Plan. This could be pursued based on those needs in the future.

- Not recommended in *I-70B Corridor Optimization Study*
- High level of property and access impacts
- High cost

New alignments of I-70B

- Urban area, no room for new alignments
- High level of property impacts

Elevated through lanes (viaduct)

- Exorbitant cost
- Difficult access to numerous intersections

Tunnel I-70B

- Exorbitant costs
- Difficult access to numerous intersections

Other non-recommended alternative routes listed in the *I-70B Corridor Optimization Study*

- Does not address the four needs identified for this project

2.5.2 Alternatives Development and Comparative Evaluation (Level 1)

The I-70B West Corridor serves a variety of land uses and travel purposes. Near the eastern terminus, I-70B serves downtown Grand Junction, which has many governmental and professional establishments. Near the western terminus, I-70B serves big box retail, dealerships, and a variety of retail and individual establishments. Reflecting the varying context of the corridor, alternatives for the corridor were examined incrementally by looking at specific sections and intersections. The specific sections are as follows:

24 Road to Rimrock Avenue

- 24 Road to 24½ Road Westbound (Mesa Mall Area)
- 24 Road to 24½ Road Eastbound (Continental RV)
- 24½ Road to 24¾ Road Westbound (Valley Plaza)
- 24½ Road to 24¾ Road Eastbound (Circuit City)
- 24¾ Road to 25 Road Westbound (Marine Max, et.al)
- 24¾ Road to 25 Road Eastbound (Cottonwood Mall)
- 25 Road to Rimrock/Independent Westbound
- 25 Road to Rimrock/Independent Eastbound

I-70B/North Avenue interchange area

1st Street and Grand Avenue intersection area

Ute/Pitkin one-way couplet area

- 1st/2nd/Ute/Pitkin
- 4th/5th/Ute/Pitkin

For each of these sections, the decision to eliminate certain alternatives was made based on how well each alternative compared with other related alternatives, on a qualitative basis. Alternatives with greater relative advantages were kept, and alternatives with greater relative disadvantages were eliminated. At a regional level, general laneage requirements were also determined based on

projected travel demand. All alternatives for each section were compatible with all alternatives for adjacent sections.

Public and agency input resulted in the best set of alternatives being carried forward for more detailed screening. All alternatives considered are described in Section 2.5.4.

2.5.3 More Detailed Alternatives Development and Evaluation (Level 2)

After the comparative Level 1 screening of alternatives, additional public and agency input resulted in the refinement of section alternatives. A more detailed evaluation resulted in the screening of some alternatives, while others were carried forward. At this stage of evaluation and screening, a greater level of detail was used to provide the basis for making decisions. Information on each MOE was developed and analyzed, as appropriate, to compare alternatives.

After detailed evaluation of the remaining alternatives, the Preferred Alternative package was selected. A summary of each alternative considered after the fatal flaw screening and its relative advantages and disadvantages is provided in Section 2.5.4.

2.5.4 Summary of Alternatives Considered

A summary of each alternative developed is provided in the following sections. The drawings shown in these sections are from the design level completed for Level 1 screening. As alternatives were evaluated, modifications to their designs were made throughout the process to incorporate feedback from the Project Team and the public. The Preferred Alternative, with all design modifications, is described and illustrated in detail in Section 2.6.2.

2.5.4.1 Regional Through Laneage

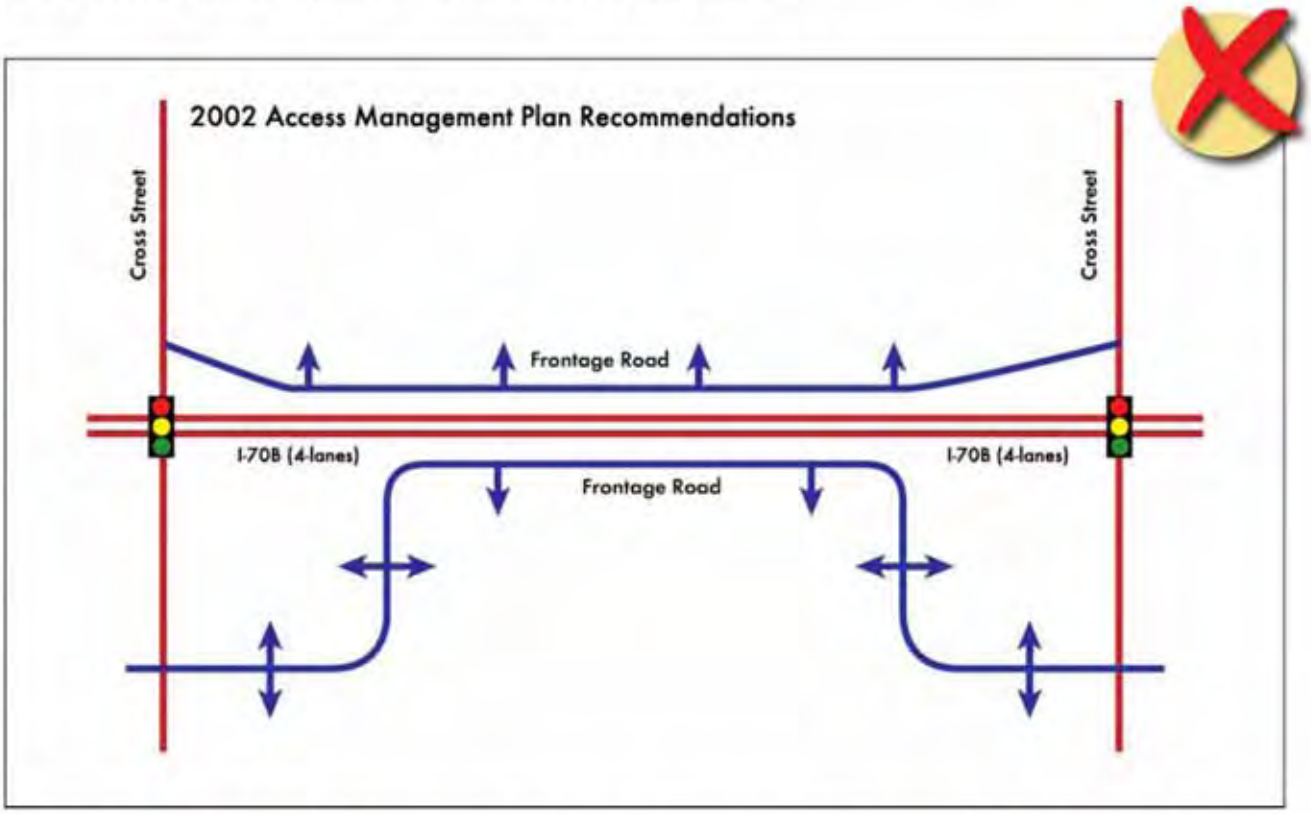
On a regional level, 4-lane and 6-lane cross-sections were developed and considered throughout the corridor. Travel demand forecasting tools were utilized to project future conditions as a basis for analysis. Other considerations, such as right-of-way impacts, construction impacts, driver expectancy, access issues, and safety were also considered. Detailed analysis led to the selection of a 6-lane cross-section for the entire corridor for analysis in the EA. The 4-lane cross-section was eliminated because it would not provide acceptable traffic operations (LOS D or better) at many intersections throughout the study corridor. Also, this cross-section does not achieve the project goal to optimize traffic operations throughout the study corridor. A 6-lane cross-section is a reasonable alternative that best meets the project Purpose and Need and goals. A 6-lane cross-section already exists from 2nd Street to 15th Street on the Ute/Pitkin one-way couplet. This 6-lane finding is consistent with the findings of the *I-70B Corridor Optimization Study.*

2.5.4.2 24 Road to Rimrock Avenue

Several alternative scenarios - termed Access Alternatives - were developed for each area in the 24 Road to Rimrock Avenue Section, where the analysis described above revealed that a 6-lane cross-section with raised median would be warranted to meet travel demand in 2030. Access Alternatives were developed using "Themes" and were fit to the existing access needs. An access management plan (AMP) process for the corridor was conducted in 2002, and was used as a basis for the development of six access alternatives for this area.

Figure 2-2 through **Figure 2-7** illustrate the conceptual layouts of each Access Alternative considered for the 24 Road to Rimrock Avenue Section and summarize the relative advantages and disadvantages of each. The evaluation and screening recommendation is also presented.

Figure 2-2 24 Road to Rimrock Avenue - Access Alternative A

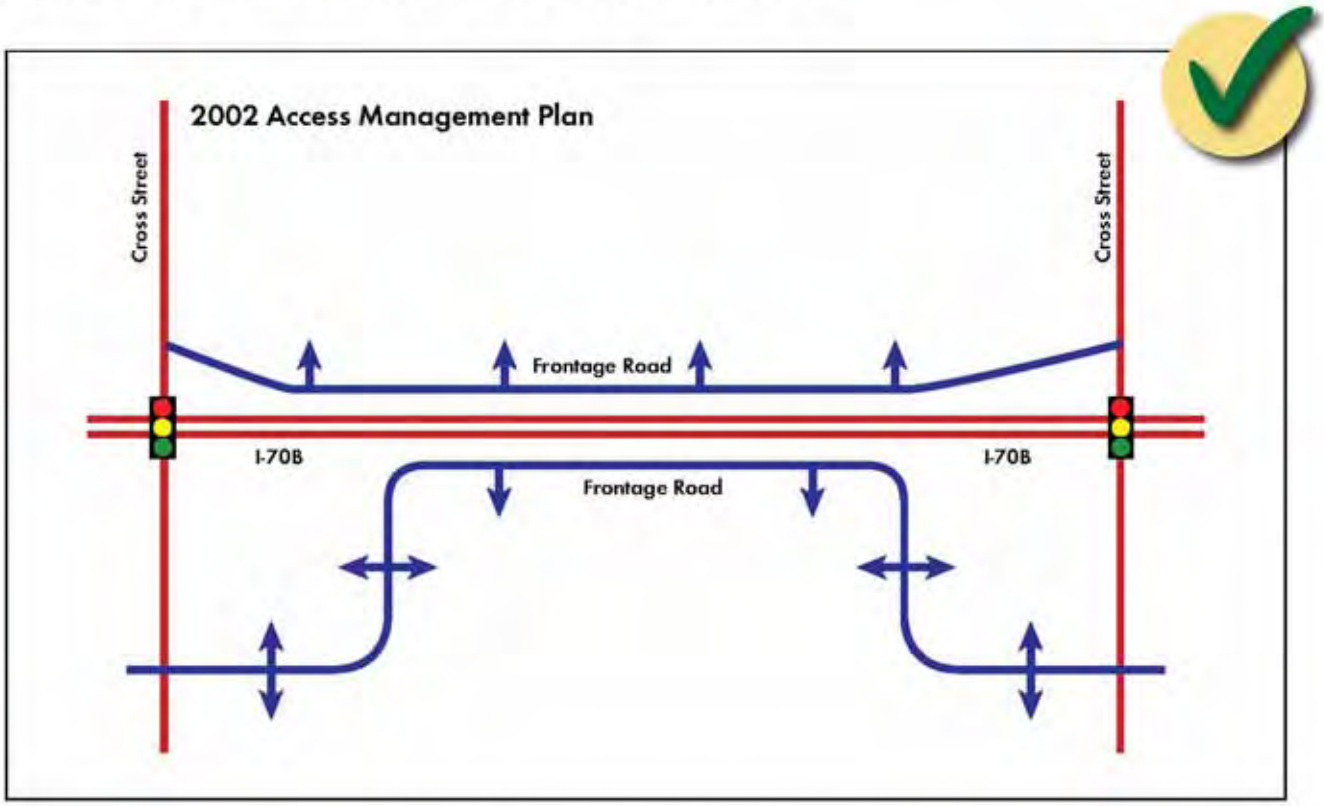


Alternative A - This alternative incorporates the Access Management Plan recommendation from 2002. Most direct property access to I-70B is closed, crossovers are closed, and most frontage roads are maintained. The I-70B median would be raised except at signals.

Benefits	Issues
• ***Travel Demand and Safety:*** Reduces number of direct access points to I-70B • ***Safety:*** Access limited to signalized locations, reducing number of vehicle conflicts • ***Access and Environmental:*** Potential to increase business value by improving mobility and providing safer access	• ***Travel Demand:*** 4-lane I-70B does not meet travel demand needs • ***Access:*** Access to several businesses requires travelers to go out of their way • ***Implementation:*** Requires acquisition of railroad property between 24 1/2 Road and 24 3/4 Road • ***Implementation:*** Requires maintenance of several frontage roads

ELIMINATED: Access Alternative A was eliminated because a 4-lane I-70B would not provide adequate capacity and the need to purchase railroad right-of-way. Furthermore, Alternative B is comparatively better than Alternative A as it better accommodates the 6-lane configuration and current conditions.

Figure 2-3 24 Road to Rimrock Avenue - Access Alternative B

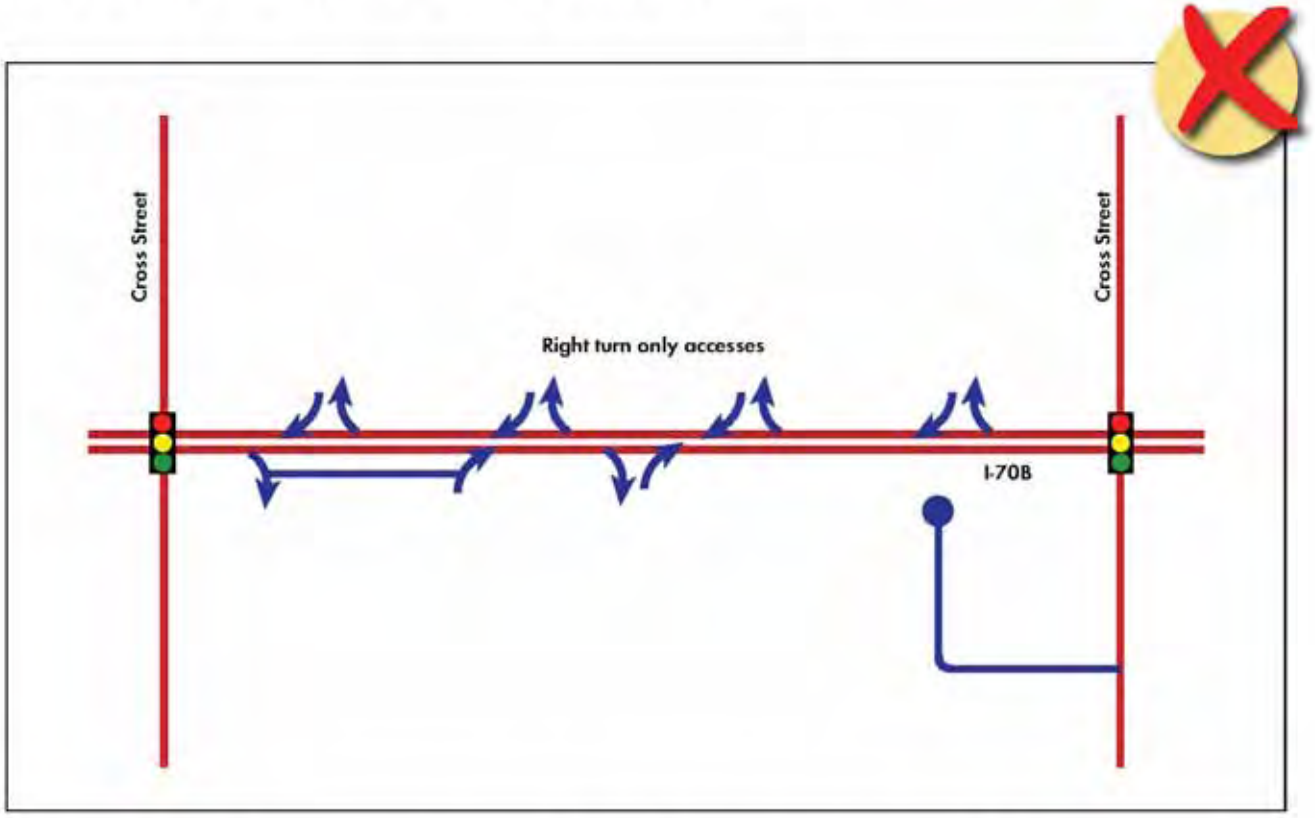


Alternative B - This alternative modifies the 2002 Access Management Plan recommendations to address the primary reasons that Alternative A was eliminated. Most direct property access to I-70B is closed, crossovers are closed, and most frontage roads are maintained. The I-70B median would be raised except at signals.

Benefits	Issues
• *Travel Demand and Safety:* Reduces number of direct access points to I-70B • *Safety:* Access limited to signalized locations, reducing number of vehicle conflicts • *Access and Environmental:* Potential to increase business value by improving mobility and providing safer access	• *Travel Demand:* Results in more traffic at signalized intersections • *Access:* Access to several businesses requires travelers to go out of their way • *Access:* 25 Road medians prevent full movements at frontage roads • *Implementation:* Requires maintenance of several frontage roads

CARRIED FORWARD: Access Alternative B was carried forward for only the south side of I-70B between 24½ Road and 24¾ Road because it provides adequate capacity on I-70B and good access in this segment. It was screened out for all other areas because of out-of-direction travel and maintenance costs, which includes re-paving, re-striping, cleaning, etc.

Figure 2-4 24 Road to Rimrock Avenue - Access Alternative C

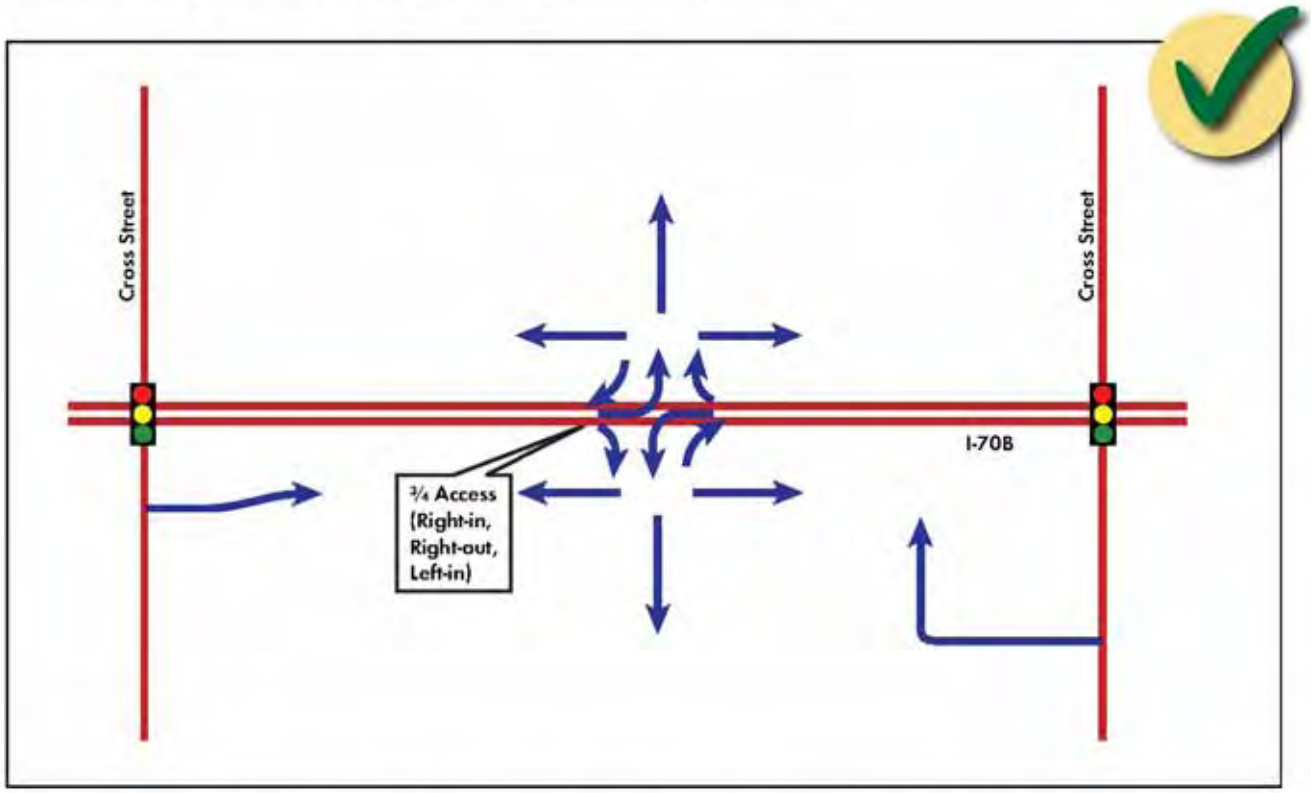


Alternative C - This alternative would remove the frontage roads and provide separate RIRO accesses. One RIRO access would be provided for each pair of properties. The I-70B median would be raised except at signals.

Benefits	Issues
• ***Travel Demand:*** Compatible with widening of I-70B • ***Travel Demand and Safety:*** Reduces number of full-movement intersections along I-70B • ***Access and Environmental:*** Potential to increase business value by improving mobility and providing safer access • ***Implementation:*** Eliminates most of frontage road and maintenance costs associated with it	• ***Travel Demand and Safety:*** Would result in a high number of U-turns at signals • ***Safety:*** High number of RIRO accesses creates higher potential for accidents on I-70B • ***Safety and Access:*** Eliminates use of frontage roads for business deliveries and access maneuvers • ***Access:*** Access to several businesses requires travelers to go out of their way • ***Access and Environmental:*** Requires modifications to parking and business access locations

ELIMINATED: Access Alternative C was eliminated because of the number of and close spacing of remaining accesses, the resulting safety concerns, and the increased difficulty to access businesses from the opposite direction on I-70B.

Figure 2-5 24 Road to Rimrock Avenue - Access Alternative D

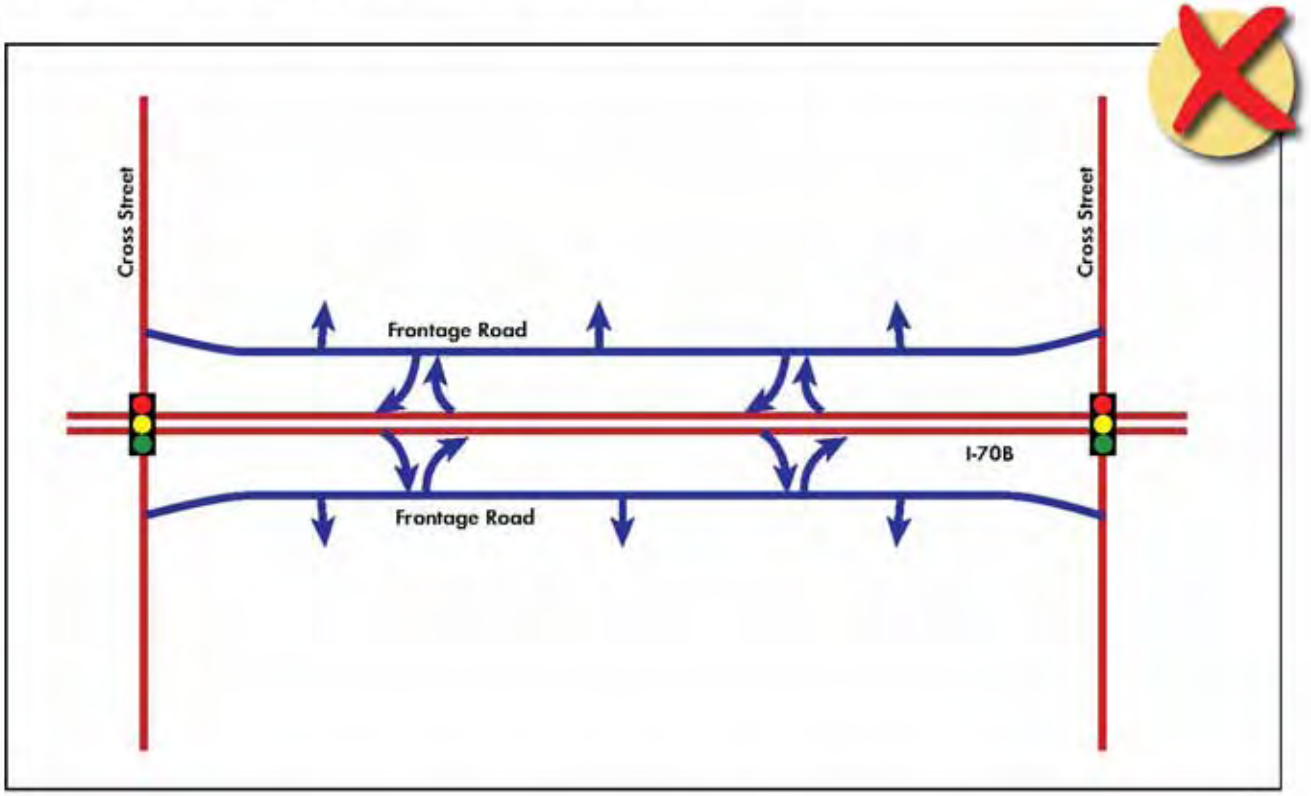


Alternative D - This alternative would control access with signals and 3/4 access points. A 3/4 access point is an access that allows all movements except for the exiting left-turn as shown above. It would construct an I-70B raised median except at signals and ¾ access points, close frontage road connections except at ¾ access points, allow one left-in turn movement (¾ access) in each direction between each pair of signals, and keep some frontage road segments.

Benefits	Issues
• ***Travel Demand and Safety:*** Reduces number of full-movement intersections along I-70B • ***Safety:*** 3/4 accesses have much better safety records than full movement accesses • ***Access:*** Provides good inbound access for most businesses • ***Access and Environmental:*** Potential to increase business value by improving mobility and providing safer access • ***Environmental:*** Establishes access locations and types that would be compatible with future redevelopment	• ***Travel Demand and Safety:*** Would result in some U-turns at signals • ***Safety:*** Safety benefit not as high as Alternatives A or B, similar to Alternative C • ***Access:*** Would need to restrict truck access at some locations due to tight design; trucks could continue to use signal accesses • ***Environmental and Implementation:*** Requires property acquisition and/or business disturbance or relocation in some locations to implement with proper design criteria • ***Implementation:*** Requires maintenance of some frontage roads

CARRIED FORWARD: Access Alternative D was carried forward for all areas except the south side of I-70B between 24 ½ Road and 24 ¾ Road (Access Alternative B). Access Alterative D provides adequate capacity, comparably good business access, and reasonable safety and mobility levels for I-70B.

Figure 2-6 24 Road to Rimrock Avenue - Access Alternative E

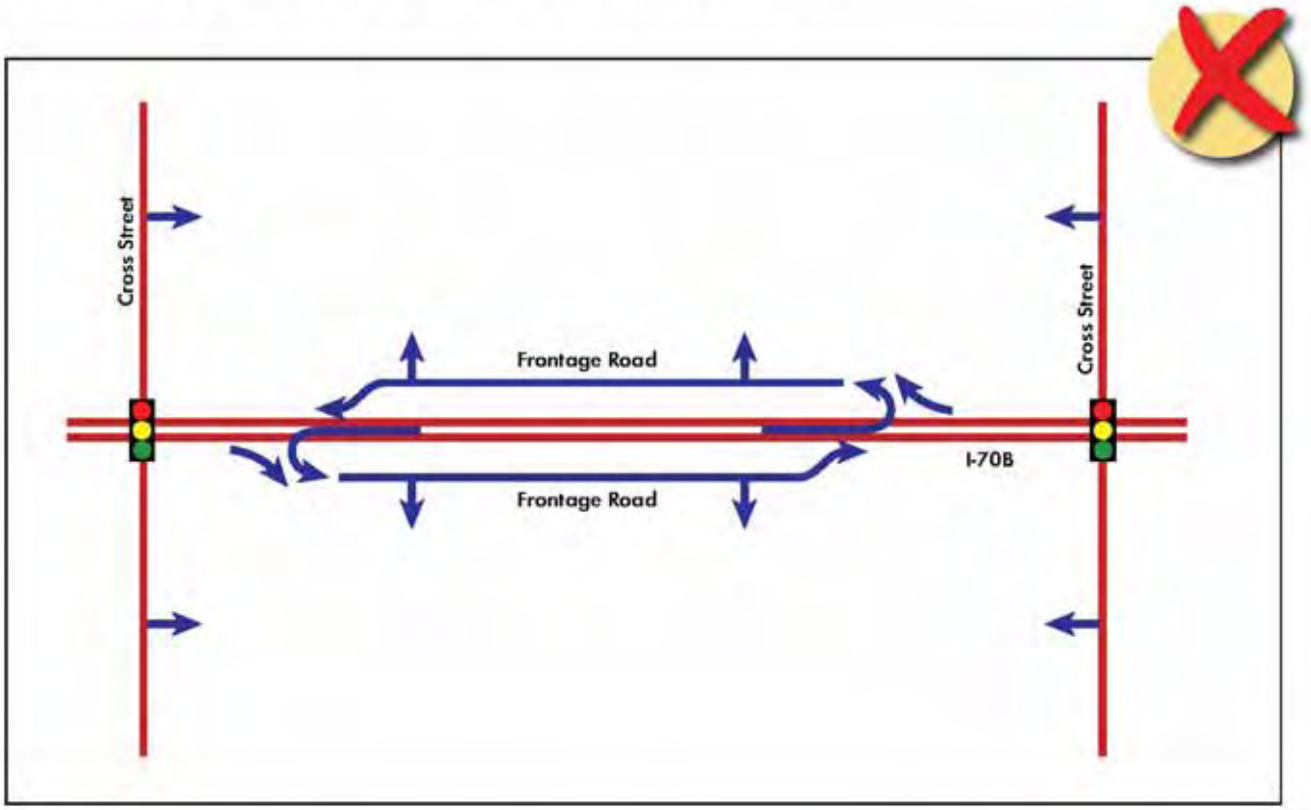


Alternative E - This alternative would widen I-70B, close I-70B median (raised median), and keep existing frontage road and connections as RIRO only. No other changes would be made to frontage roads or driveways. The resulting access to businesses would be similar to Alternative C.

Benefits	Issues
• *Travel Demand:* Compatible with widening of I-70B • *Travel Demand and Safety:* Reduces number of full-movement intersections along I-70B • *Implementation:* Low cost compared to other alternatives	• *Travel Demand and Safety:* Would result in a high number of U-turns at signals • *Safety:* Safety issues related to sight distance and unexpected traffic movements at the frontage road connections, similar to issues today • *Environmental:* Not compatible with future redevelopment along the corridor • *Implementation:* Requires maintenance of several frontage roads

ELIMINATED: Access alternative E was eliminated because it does not address the safety/design issues at frontage road connection locations, including short turning radii, lack of vehicle storage, and poor sight distances.

Figure 2-7 24 Road to Rimrock Avenue - Access Alternative F



Alternative F - This alternative would control access with signals, ¾ access points, and some frontage roads. It would construct an I-70B median except at signals and ¾ accesses, close most frontage road connections, allow left-in turn movement (¾ access) in each direction between each pair of signals, and keep some frontage road segments.

Benefits	Issues
• *Travel Demand and Safety:* Reduces number of full-movement intersections along I-70B • *Safety:* 3/4 accesses have much better safety records than full movement accesses • *Access:* Provides good inbound access for most businesses • *Access:* May accommodate trucks better than Alternative D • *Environmental:* Fewer property impacts compared to Alternative D	• *Travel Demand and Safety:* Would result in some U-turns at signals • *Safety:* Safety benefit not as high as Alternatives A or B, similar to Alternative C • *Access:* Some movements may be difficult for trucks • *Implementation:* Requires maintenance of several frontage roads • *Implementation:* 3/4 accesses would be close to signals, which already provide left-turn access

ELIMINATED: Access Alternative F was eliminated because of safety concerns of unusual design and close spacing of intersections, which causes possible unexpected vehicle conflicts, as well as poor sight distances.

Comparative Level 1 screening resulted in Alternatives B, D, and F being carried forward for further evaluation in Level 2 and Alternatives A, C, and E being eliminated. Following the more detailed Level 2 Screening, Alternative F was eliminated because of safety concerns.

During Level 2 evaluation, Access Alternatives B, D, and F were evaluated individually in greater detail for each area of I-70B from 24 Road to Rimrock Avenue. With public and agency input, a Preferred Alternative for each section and each direction was carried forward for evaluation in the Preferred Alternative package. The alternatives evaluation is described below.

24 Road to 24 ½ Road

- Alternative D is carried forward on both the north and south sides of I-70B.
- The existing signal at the east access to Mesa Mall would remain because it best fits signal coordination for the corridor in this location.
- A ¾ left access would be provided into Mesa Mall at the western most entrance.
- A RIRO access would be provided at the middle entrance to Mesa Mall to reduce conflict and improve safety.

24 ½ Road to 24 ¾ Road

- Alternative D is carried forward on the north side. This alternative accommodates future development, provides reasonably safe access, and works best with the current access needs when compared with Alternatives B and F.
- Alternative B is carried forward on the south side. With this alternative, business owners on the south side have good access to both 24 ½ Road and 24 ¾ Road intersections. This alternative provides fewer impacts than Alternative D and better access than Alternative F. This alternative also allows for a future ¾ access to be added.

24 ¾ Road to 25 Road

- Alternative D is carried forward on both the north and south sides of I-70B.
- This alternative provides the best access to adjacent businesses while minimizing the impacts to the area around the ¾ turns. The ¾ turns improve ingress to businesses while reducing traffic and out-of-direction movements at the adjacent signalized intersections.
- This alternative requires the acquisition of Watermark Spas on the south side and limited property impacts to other businesses to accommodate a properly designed ¾ access and transition to the frontage roads. On the north side, the design of the ¾ access would be elongated to fit the existing constraints, with special design considerations to discourage wrong-way movements. The west part of the frontage road would not connect to the ¾ access; it would end with driveways to Carino's restaurant and Marine Max. This design could be modified in the future if one or more properties redevelop.

25 Road to Rimrock

- Alternative D is carried forward on both the north and south sides of I-70B.
- This alternative provides the best access to adjacent businesses while minimizing the impacts to the area around the ¾ turns. The ¾ turns improve ingress to businesses while reducing traffic and out-of-direction movements at the adjacent signalized intersections.
- On both the south side and the north side the frontage road would tie to Bogart Lane and Independent Avenue.

The Preferred Alternative is described and illustrated in detail in Section 2.6.2.

2.5.4.3 I-70B/North Avenue Interchange Area

The four alternatives developed for the I-70B/North Avenue interchange ranged from adding minor turning movements to completely rebuilding the existing interchange to a full diamond interchange.

Figure 2-8 through **Figure 2-11** illustrate and summarize the relative advantages and disadvantages of each alternative considered and provide the evaluation and screening recommendations.

I-70B/North Avenue Interchange Area

Figure 2-8 I-70B/North Avenue Interchange Area - Alternative 1

Alternative 1 - This alternative would keep the existing interchange configuration, modify some turns, modify connections to/from North Avenue, improve weave distances, and move left-turn (westbound to southbound) to east side of bridge as a ¾ movement serving development on southwest side.

Benefits	Issues
• *Travel Demand:* Addresses travel demand needs • *Safety and Travel Demand:* High volume left turn to North Avenue remains grade separated from I-70B, providing safety and mobility benefits • *Access:* Adds 3/4 left-turn opportunity for access to future Teller Avenue • *Implementation:* Lowest cost alternative at this location	• *Safety:* Weaving concerns between Rimrock signal and North Avenue ramps • *Safety:* Weaving concerns from westbound North Avenue to 3/4 access to Rimrock retail area • *Safety and Access:* High speed design within an otherwise signalized corridor limits access options in the area • *Implementation:* 3/4 left-turn southeast of interchange is not consistent with City's Circulation Plan

CARRIED FORWARD WITH ADDITIONAL ENHANCEMENTS: Alternative 1 was carried forward because it addresses 2030 traffic demand and improves access at the lowest overall cost.

Note: Design modifications made after Level 2 screening (see Section 2.6 for design).

Figure 2-9 I-70B/North Avenue Interchange Area - Alternative 2

Alternative 2 - This alternative would remove the bridge and keep I-70B in its existing location. It would leave I-70B lanes in their existing locations and signalize the intersections to allow a fourth leg to the south to serve local access.

Benefits	Issues
• *Access:* Allows a fourth leg to be added to intersection to serve developing Rimrock area • *Implementation:* Could be a lower cost initial phase of Alternative 3 (adds some pavement compared to major reconstruction) • *Implementation:* Removes potential need for future maintenance or reconstruction of bridge	• *Travel Demand:* Odd split configuration for accommodating high volume left turn to North Avenue • *Travel Demand and Safety:* High volume left turn to North Avenue no longer grade separated from I-70B • *Safety:* Weaving concerns between Rimrock signal and North Avenue intersection • *Implementation:* Requires detour during construction and removal of the bridge to maintain traffic flow

ELIMINATED: Alternative 2 was eliminated because of safety concerns related to replacing a fully directional interchange with signalized intersections where there are more vehicle conflicts and because of comparably high costs and construction impacts.

Figure 2-10 I-70B/North Avenue Interchange Area - Alternative 3

Alternative 3 - This alternative would remove the bridge, realign westbound I-70B adjacent to eastbound to make standard arterial section. It would signalize North Avenue and Rimrock area local access as a 4-way intersection.

Benefits	Issues
• *Safety:* Creates standard arterial section, consistent with the remainder of the corridor • *Access:* Allows a fourth leg to be added to intersection to serve developing Rimrock area • *Implementation:* May be possible to sell back some unused right-of-way	• *Travel Demand and Safety:* High volume left turn to North Avenue no longer grade separated from I-70B • *Implementation:* Higher cost to realign about 1/2 mile of the northern half of I-70B • *Implementation:* Requires detour during construction and removal of the bridge to maintain traffic flow

ELIMINATED: Alternative 3 was eliminated because of safety concerns related to replacing a fully directional interchange with a signalized intersection where there are more vehicle conflicts and because of comparably high costs and construction impacts.

Figure 2-11 I-70B/North Avenue Interchange Area - Alternative 4

Alternative 4 - This alternative would remove the existing bridge and build new bridges for the diamond interchange. The western leg could serve Rimrock area local access as a 4-way intersection.

Benefits	Issues
• *Travel Demand:* Logical design for dropping/adding third through lane • *Safety:* Should have the greatest safety benefit of the bridge separating two heavy movements • *Access:* Flexible for obtaining frontage road access on both sides and secondary access to developing Rimrock area • *Implementation:* Could use signals or roundabouts for traffic control at North Avenue and ramp intersections	• *Safety:* Replaces a fully directional interchange with a diamond configuration with more potential points of vehicle conflict • *Implementation:* Highest cost alternative, need to rebuild entire I-70B for about ½ mile, including new bridges • *Implementation:* Requires detour during construction, maintaining traffic flow during construction/removal of bridge

ELIMINATED: Alternative 4 was eliminated because of safety concerns related to replacing a fully directional interchange with a diamond configuration and because other alternatives address traffic demand at a lower cost.

As a result of the comparative Level 1 alternative screening, two alternatives were carried forward into Level 2 evaluation — Alternative 1 and Alternative 3. Alternative 1 has the same configuration as the existing interchange with improved weave operations on I-70B west of the interchange, and improved business access at the south end for Teller Avenue. Alternative 3 replaces the interchange with a signalized intersection.

Level 2 screening resulted in the selection of Alternative 1 as the Preferred Alternative component for the I-70B/ North Avenue interchange area.

The Preferred Alternative is described and illustrated in detail in Section 2.6.2.

2.5.4.4 1st Street and Grand Avenue Intersection Area

Nine alternatives were developed and evaluated during comparative Level 1 alternative screening that address traffic capacity, safety, pedestrian, and access needs at the 1st Street and Grand Avenue intersection.

Figure 2-12 through **Figure 2-20** illustrate and summarize the relative advantages and disadvantages of each alternative considered and provide the evaluation and screening recommendations.

1st Street and Grand Avenue Intersection Area

Figure 2-12 1st Street and Grand Avenue Intersection Area - Alternative 1

Alternative 1 - This alternative incorporates the Access Management Plan recommendations. It would remove 1st Street from major movements and make turning movement modifications at remaining 4-way intersection of 1st Street and Grand Avenue.

Benefits	Issues
• *Travel Demand and Safety:* Simplifies 1st Street and Grand Avenue intersection • *Travel Demand and Safety:* Removes extra signal north of Grand Avenue • *Travel Demand:* Westbound to northbound right can occur on red light or overlap left phase (right turn on red allowed)	• *Travel Demand:* Ignores substantial traffic demand on 1st Street north • *Safety and Access:* Would force southbound traffic to use residential streets to get back to Grand Avenue or to continue south • *Implementation:* Still requires intersection reconstruction to get more turn lanes for capacity

ELIMINATED: Alternative 1 was eliminated because it does not acknowledge the importance of high traffic volumes on 1st Street and would force traffic through residential streets.

Figure 2-13 1st Street and Grand Avenue Intersection Area - Alternative 2

Alternative 2 - This alternative keeps the same general configuration as the existing, while maximizing laneage. Design adjustments are made based on the same configuration in order to add through and turn lanes in specific locations.

Benefits	Issues
• *Travel Demand:* Can achieve long-term capacity needs • *Travel Demand:* Westbound to northbound right can occur on red light or overlap left phase (right turn on red allowed) • *Travel Demand and Access:* Keeps all direction access to/from 1st Street north • *Access:* Can build a better access for Grand Central Plaza, north of Grand Avenue and west of I-70B • *Access:* Maintains nearly all existing access for businesses (some adjustments) • *Environmental:* Should be no business relocations (some small property takes needed)	• *Travel Demand and Safety:* Heavy southbound to westbound right turn at Spruce Street and Grand Avenue would be yield controlled • *Access:* Restricts turns on south leg of Spruce Street (no northbound lefts) • *Access:* Would close Rite Aid driveway on 1st Street • *Implementation:* Best design would require rebuilding/straightening I-70B north of Grand Avenue

CARRIED FORWARD WITH MODIFICATIONS: Alternative 2 was carried forward because it meets 2030 traffic demand and should have comparatively low cost.

Note: Design modifications made after Level 2 screening (see Section 2.6 for design).

Figure 2-14 1st Street and Grand Avenue Intersection Area - Alternative 3

Alternative 3 - This alternative would provide a two-way Spruce Street/1st Street connection. It would include three signals, add a signal at Spruce Street and Grand Avenue, improve left-turn lanes, change the pattern of where turns occur, and make design adjustments based on configuration.

Benefits	Issues
• *Travel Demand:* Can achieve long-term capacity goals • *Travel Demand and Access:* Keeps all direction access to/from 1st Street north • *Access:* Can build a better access for Grand Central Plaza, north of Grand Avenue • *Access:* Maintains nearly all existing access for businesses • *Environmental:* Should be no business relocations (some small property takes needed)	• *Travel Demand and Safety:* Added signal, so three signals on Grand Avenue within 600 feet; Mulberry and Spruce signals only 200 feet apart • *Access:* Access to Grand Central Plaza, north of Grand Avenue, would still be difficult • *Access:* Would close Rite Aid driveway on 1st Street • *Implementation:* Best design would require improving I-70B to the north

ELMINATED: Alternative 3 was eliminated because the additional signal is too close to the existing one at Mulberry Street and Grand Avenue. Alternative 3 is more costly than Alternative 2 and does not have comparatively better traffic operations.

Figure 2-15 1st Street and Grand Avenue Intersection Area - Alternative 4

Alternative 4 - This alternative is a roundabout. Traffic volumes require three lanes for the roundabout. Some of the legs require separate right turn lanes. Its size and alignment requires at least one major business acquisition and relocation.

Benefits	Issues
• *Safety:* Safety benefits of roundabouts are well documented • *Travel Demand:* Should have greatly reduced delay, especially during off-peak hours • *Travel Demand and Access:* Keeps full access for 1st Street north • *Access:* Allows U-turns, which improves access for all nearby businesses • *Environmental:* One entire property impact (Conoco on southwest quadrant) allows other property impacts to be minimized	• *Safety and Implementation:* May need to signalize pedestrian crossings near roundabout • *Safety:* Requires complicated spiral striping for multiple lanes potentially causing driver confusion and vehicle conflicts that may lead to unsafe operations • *Safety:* Disparity between experienced and novice drivers is exacerbated at roundabouts • *Safety:* Multiple lane entries allow higher entering speeds for vehicles, which will increase the number of accidents compared to a smaller roundabout, yet still probably safer than a signalized intersection • *Environmental:* May require overhead approach signing for guidance, creating visual impacts • *Implementation:* Construction impacts, detours, and business impacts during construction

ELIMINATED: Alternative 4 was eliminated because, while it meets travel demand safely, it requires new right-of-way, a business relocation, has higher costs, and the multi-lanes could be confusing to drivers.

Figure 2-16 1st Street and Grand Avenue Intersection Area - Alternative 5

Alternative 5 - This alternative is a one-way signalized loop (signalized traffic circle).

Benefits	Issues
• ***Travel Demand and Access:*** Keeps full access for 1st Street north • ***Safety:*** Should have better safety potential than normal 4-way signalized intersection, yet not as good as standard roundabout • ***Safety and Implementation:*** Signals would define pedestrian crossings, unlike roundabout, which may require signals for pedestrians nearby the roundabout; pedestrian crossings could go through central island • ***Access:*** Allows U-turns, which improves access for all nearby businesses • ***Environmental:*** Less strict design criteria means that property impacts can be reduced compared to the regular roundabout alternative (Alterative 4) • ***Implementation:*** Similar to roundabout yet signalization allows less strict design criteria for entry design	• ***Travel Demand:*** Will have higher delay than normal roundabout, especially during off-peak hours • ***Safety:*** Requires complicated spiral striping for multiple lanes, potentially causing driver confusion and vehicle conflicts that may lead to unsafe operations • ***Safety and Implementation:*** Pedestrian crossings of traffic circle exits would be complicated within signal progression of the circle, but there may be alternatives to pedestrians crossing the exit lanes • ***Environmental:*** May require overhead approach signing for guidance, creating visual impacts • ***Implementation:*** Construction impacts, detours, and business impacts during construction • ***Implementation:*** Lacks public and agency support

ELIMINATED: Alternative 5 was eliminated because of driver expectancy, increased delay, and lack of public and agency support.

Figure 2-17 1st Street and Grand Avenue Intersection Area - Alternative 6

Alternative 6 - This alternative would realign 1st Street over I-70B, connect to Spruce Street, and lower I-70B. It would remove 1st Street from major movements, and provide turning movement modifications at remaining 4-way intersection of 1st Street and Grand Avenue.

Benefits	Issues
• *Travel Demand:* Addresses long-term capacity needs • *Travel Demand and Safety:* Simplifies 1st Street and Grand Avenue intersection • *Travel Demand and Access:* Maintains good access to 1st Street north	• *Travel Demand and Safety:* Added signal, so three signals on Grand Avenue within 600 feet; Mulberry and Spruce signals only 200 feet apart • *Travel Demand and Access:* Discontinuous access to 1st Street north • *Environmental and Implementation:* Construction cost and property impacts north of Grand Avenue • *Implementation:* May be excessive for addressing existing and forecasted intersection issues

ELIMINATED: Alternative 6 was eliminated because of safety concerns with the added signal, property and access issues and the comparative expense of this alternative does not seem justified compared to Alternative 2 or Alternative 5, which also address traffic demand similarly.

Figure 2-18 1st Street and Grand Avenue Intersection Area - Alternative 7

Alternative 7 - This alternative would realign 1st Street over I-70B, connect to Mulberry Street, and lower I-70B. Similar to Alternative 6, it would connect 1st Street to Mulberry Street one block north of Grand Avenue.

Benefits	Issues
• ***Travel Demand:*** Addresses long-term capacity needs • ***Travel Demand and Safety:*** Simplifies 1st Street and Grand Avenue intersection • ***Travel Demand and Safety:*** Keeps number of signals on Grand Avenue the same as today • ***Implementation:*** Should have more flexible vertical geometry compared to Alternative 6	• ***Travel Demand and Access:*** Discontinuous access to 1st Street north • ***Environmental and Implementation:*** Construction cost and impacts north of Grand Avenue, including business acquisitions and reconstruction of Mulberry Street • ***Implementation:*** May be excessive for addressing existing and forecasted intersection issues

ELIMINATED: Alternative 7 was eliminated because the property impacts combined with the comparative expense of this alternative do not seem justified compared to Alternative 2 or Alternative 4, which also address traffic demand.

Figure 2-19 1st Street and Grand Avenue Intersection Area - Alternative 8

Alternative 8 - This alternative would construct I-70B over Grand Avenue. It would require a mixture of ramps and connector roads to make connections. 1st Street would intersect Grand Avenue at grade.

Benefits	Issues
• *Travel Demand:* Reduces movements at 1st Street and Grand Avenue intersection, makes it more efficient with fewer lanes • *Travel Demand:* Addresses long-term capacity needs • *Travel Demand and Access:* Maintains access to 1st Street north • *Safety:* Safety benefits of removing 30% of traffic from at-grade intersection	• *Access and Environmental:* Impacts access and property for 2 blocks south of Grand Avenue • *Environmental:* Visual impacts of overpass and retaining walls • *Implementation:* Construction cost may be excessive for addressing existing and forecasted intersection issues • *Implementation:* Constructability and impacts/ detours during construction

ELIMINATED: Alternative 8 was eliminated because the property impacts, extended access impacts, and comparative expense of this alternative do not seem justified compared to Alternative 2 or Alternative 5, which also address traffic demand similarly.

Figure 2-20 1st Street and Grand Avenue Intersection Area - Alternative 9

Alternative 9 - This alternative is a one-way pair with southbound travel using Spruce Street. There would be multiple connection options at the south end to connect to Pitkin Avenue.

Benefits	Issues
• *Travel Demand:* Can achieve long-term capacity goals • *Travel Demand and Access:* Keeps all direction access to/from 1st Street north • *Safety:* Could address the low speed curve from westbound Ute Avenue to northbound 1st Street • *Access:* Maintains nearly all existing access for businesses	• *Travel Demand:* Requires lower speed design for crossover to minimize impacts • *Travel Demand and Safety:* Added signal at Spruce Street, so three signals on Grand Avenue within 600 feet (signals at 1st and Mulberry Streets are existing); Mulberry and Spruce signals only 200 feet apart • *Access:* Would close Rite Aid driveway on 1st Street • *Environmental:* Requires property acquisition for crossover, either parking area or warehouse • *Environmental:* Requires acquisition of Liquor Store in Grand Central Plaza • *Implementation:* Capacity improvement is not appreciably better than Alternative 2, Alternative 4, or Alternative 5, which have fewer impacts and costs • *Implementation:* Best design would require improving I-70B to the north

ELIMINATED: Alternative 9 was eliminated because the property impacts and comparative expense of this alternative do not seem justified compared to Alternative 2, Alternative 4, or Alternative 5, which also address traffic demand similarly.

Several alternatives included bridges for either I-70B or 1st Street; however, those alternatives were screened out since they have very high costs and right-of-way impacts. A one-way couplet alternative was tested that moved southbound traffic to Spruce Street, but was screened out due to costs and impacts with the connection of Spruce Street back to 1st Street. A roundabout alternative was developed and tested. A roundabout would need to be quite large to accommodate the traffic demand, requiring three to four circulating lanes and would require at least one major property acquisition. A one-way traffic loop with signals was evaluated and carried forward into Level 2 screening, as the design criteria for a signalized roundabout results in fewer property impacts. Several alternatives that keep nearly the same layout of the intersection were tested with the finding that the addition of through lanes on I 70B, key left-turn lanes, adequate storage for queuing vehicles, and a combination of other minor improvements would accommodate the forecasted traffic needs.

Alternative 2 was selected as the Preferred Alternative for the 1st Street and Grand Avenue intersection area. Both Alternative 2 and Alternative 5 would accommodate traffic demand in 2030. Alternative 2 would accommodate I-70B through movements better, would provide better access to adjacent land uses, would have fewer environmental impacts, would be more consistent with driver expectations, would allow better pedestrian connectivity, and would be easier to implement. The Preferred Alternative is described and illustrated in detail in Section 2.6.2.

2.5.4.5 Ute/Pitkin One-Way Couplet Area

The Ute/Pitkin area was split into two areas of interest in the comparative Level 1 screening process - the area near 1st and 2nd Streets and the area near 4th and 5th Streets. These areas present distinct issues and require separate traffic solutions.

Figure 2-21 and **Figure 2-22** illustrate and summarize the relative advantages and disadvantages of each alternative considered and provide the evaluation and screening recommendations.

1st/2nd/Ute/Pitkin Area

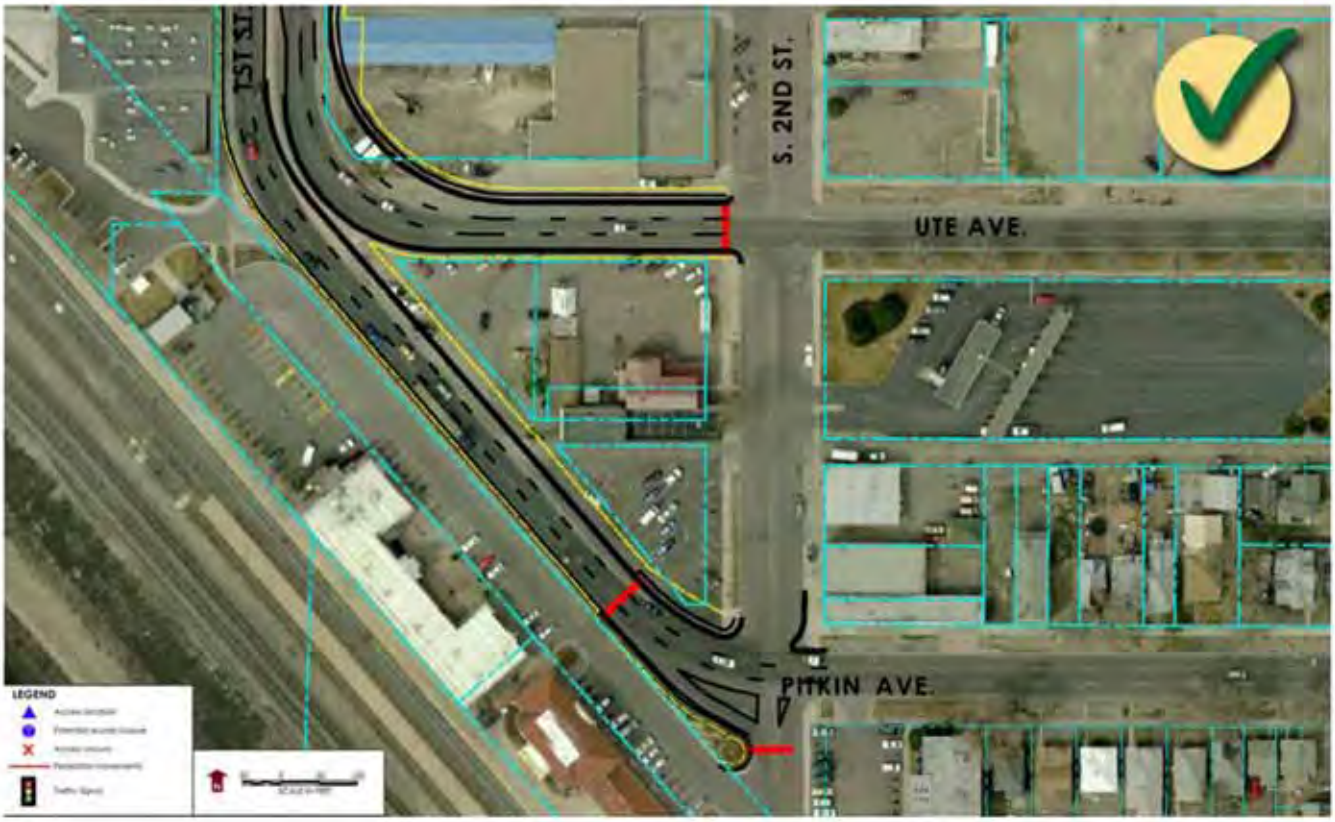
Figure 2-21 1st/2nd/Ute/Pitkin - Alternative 1

Alternative 1 - This alternative would provide a 4-lane cross-section on I-70B. It would realign 2nd Street between Ute and Pitkin Avenues. It would improve curve radii on both Ute and Pitkin Avenues.

Benefits	Issues
• *Safety:* Improves safety at 2nd Street and Pitkin Avenue intersection • *Safety:* Improves safety for through movements • *Safety and Environmental:* Increased pedestrian/bicycle mobility	• *Travel Demand:* No capacity improvement • *Environmental:* Need to acquire land for 2nd Street realignment • *Implementation:* Higher cost then Alternative 2

ELMINATED: Alternative 1 was eliminated because of lack of capacity improvements and right-of-way impacts.

Figure 2-22 1st/2nd/Ute/Pitkin - Alternative 2



Alternative 2 - This alternative would provide a 6-lane cross-section on I-70B. It would improve the geometry of the Ute Avenue/1st Street curve. The 6-lane cross-section would continue north along 1st Street.

Benefits	Issues
• ***Travel Demand:*** Increased capacity • ***Safety:*** Improves safety for Ute Avenue/1st Street curve • ***Environmental:*** Comparatively fewer right-of-way impacts than Alternative 1 at the 2nd Streets and Pitkin Avenue intersection	• ***Safety and Environmental:*** Slightly less pedestrian/bicycle mobility than Alternative 1 • ***Environmental:*** Right-of-way impacts and partial acquisition of an open air shed adjacent to the Ute Avenue/1st Street curve. This involves removal of a portion of the shed's roof, walls, and floor. The remaining portion of the shed will remain usable.

CARRIED FORWARD: Alternative 2 was carried forward because it provides increased capacity, improved curve design, and enhanced pedestrian mobility.

1st/2nd/Ute/Pitkin Area

The alternative elements developed for the Ute Avenue to 1st Street curve include improving curve radius, improving the cross section, and adding a sidewalk while limiting the right-of-way impacts. Alternative elements considered at 2nd Street/Pitkin Avenue include the use of City property on the northwest corner to move the 2nd Street intersection west, improve sight distance, and provide a more visible pedestrian crossing opportunity. Intersection modifications would also limit turn movements to improve safety.

After detailed evaluation of the 1st and 2nd Streets area, the disadvantages - right-of-way acquisition and cost elements of improvements to the curves of the two roadways - were found to outweigh the safety benefits provided. 2nd Street is not realigned to the west as the cost of improvements outweigh the limited safety benefit. However, a third lane in each direction of I-70B was added to improve traffic operations and travel consistency. Additionally, pedestrian improvements were provided, including a crossing of Pitkin Avenue near 2nd Street, and northbound through traffic at the Pitkin Avenue and 2nd Street intersection was eliminated to address an existing safety problem. These improvements result in minor right-of-way impacts and moderate improvements to the curves.

The Preferred Alternative is described and illustrated in detail in Section 2.6.2.

2.5.4.6 4th/5th/Ute/Pitkin Area

In the 4th and 5th Streets area, the number of reasonable alternatives was limited because of the project goal to minimize impacts. Two primary alternatives were developed that have minimal property and park impacts.

Figure 2-23 and **Figure 2-24** illustrate and summarize the relative advantages and disadvantages of each alternative considered and provide the evaluation and screening recommendations.

4th/5th/Ute/Pitkin Area

Figure 2-23 4th/5th/Ute/Pitkin - Alternative 1

Alternative 1 - This alternative would keep the existing configuration while providing turn lane improvements. It would add a northbound right from 5th Street to Pitkin Avenue, another northbound left from 5th Street to Ute Avenue, and separate eastbound rights from through traffic at 5th Street/Pitkin Avenue.

Benefits	Issues
• ***Travel Demand:*** Achieves needed capacity for future demand • ***Safety and Environmental:*** Separates through and turn lanes to allow better pedestrian phasing with signals • ***Safety:*** Adds islands that shorten pedestrian crossings • ***Environmental:*** Should have minimal property impacts	• ***Travel Demand:*** Higher average vehicle delay through the area than Alternative 2 • ***Travel Demand and Safety:*** Tight design for trucks, especially eastbound to southbound right at 5th Street/Pitkin Avenue, creates potential vehicle conflict and limits mobility • ***Environmental:*** Impacts to Whitman park

ELIMINATED: Alternative 1 was eliminated because of increased delay and safety concerns.

Figure 2-24 4th/5th/Ute/Pitkin - Alternative 2

Alternative 2 - This alternative would convert 5th Street to one-way northbound travel and 4th Street to one-way southbound travel. It would create a one-way loop and modify laneage and signal timing to match.

Benefits	Issues
• ***Travel Demand:*** Provides better traffic operations with lower overall average delay • ***Safety:*** Good match to existing one-ways on 4th/5th Streets to the north reduces driver confusion • ***Safety:*** Larger islands than Alternative 1 for better pedestrian refuge areas • ***Environmental:*** Minimal property impacts	• ***Travel Demand:*** Left-turns from Ute Avenue require out-of-direction travel; left (on 4th Street), then left (on Pitkin Avenue), then right (on SH 50) • ***Travel Demand and Safety:*** Tight design for trucks, especially eastbound to southbound right at 5th Street/Pitkin Avenue, creates potential vehicle conflict and limits mobility • ***Environmental:*** Small impacts at the corners of the park

CARRIED FORWARD: Alternative 2 was carried forward because it provides better traffic operations with fewer property impacts at a lower cost.

Note: Design modifications made after Level 2 screening (see Section 2.6 for design).

Alternative 1 keeps the existing traffic pattern but improves the number of turn lanes at key locations. The goal was to separate the "shared" or "optional" lanes so that there would be distinct through lanes and turn lanes for the major turning movements. This would also improve pedestrian access to the park by allowing more signal time for pedestrians.

Alternative 2 creates a one-way loop around Whitman Park and shared/optional lanes would be eliminated. Westbound Ute Avenue to southbound 5th Street turns would need to use 4th Street, resulting in one out-of-direction turn movement. In this alternative, there would be minor impacts on the corners of Whitman Park to accommodate the turning movements. Again, pedestrian access to the park would be improved.

Alternative 2 was carried forward for inclusion in the Preferred Alternative. While both alternatives are projected to operate at acceptable levels of service, Alternative 2 minimizes average delay, provides greater flexibility of operations, and provides safer operations when compared to Alternative 1.

The Preferred Alternative for this area is described and illustrated in detail in Section 2.6.2.

2.6 ALTERNATIVES ADVANCED

As a result of the systematic evaluation process followed and extensive input from the public and other affected stakeholders, the No Action Alternative and the Preferred Alternative were advanced for detailed analysis in the EA. These alternatives are described below.

A complete description of the social, economic, and environmental impacts associated with the No Action Alternative and the Preferred Alternative is found in Chapter 3 of this EA. Detailed transportation and traffic information is also included in Chapter 3 of this EA, and public and agency comments and coordination is found in Chapter 4 of this EA.

2.6.1 No Action Alternative

The No Action Alternative includes only those projects that already have committed funds for improvements. These improvements would be made whether or not any other improvements are made in conjunction with the project. The No Action Alternative is fully assessed and is used as a baseline for environmental analysis purposes. Committed projects that are included in the No Action Alternative are identified below and illustrated in **Figure 2-25.**

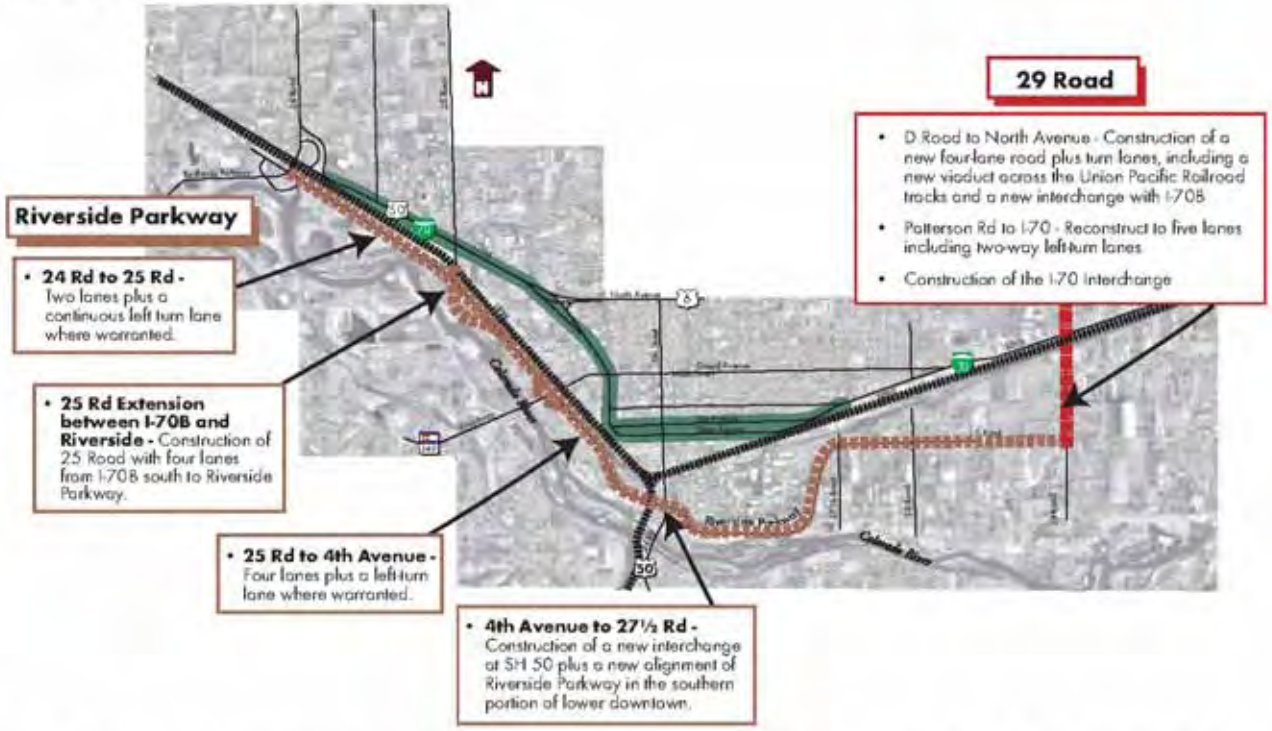
Riverside Parkway

- **24 Road to 25 Road** — Construction of two lanes plus a continuous, two-way, left-turn lane where warranted (opening late 2008).
- **25 Road to Fourth Avenue** — Construction of four lanes plus a two-way, left-turn lane where warranted (opening late 2008).
- **Fourth Avenue to 27½ Road** — Construction of four lanes, including a new interchange at the junction of Riverside Parkway and SH 50, as well as an alignment of Riverside Parkway along the southern portion of the lower downtown area (9th Street west opened in December 2006, 9th Street east opening in late 2008).
- **25 Road extension between I-70B and Riverside** — Construction of 25 Road with four lanes from I-70B south to Riverside Parkway (opening late 2008).

29 Road

- **D Road to North Avenue** — Construction of a new 4-lane road plus turn lanes, including a new viaduct across the Union Pacific Railroad tracks and a new interchange with I-70B.
- **Patterson Road to I-70** — Reconstruction to five lanes including two-way left-turn lanes.
- Construction of a new interchange with I-70.

Figure 2-25 No Action Alternative



The following advantages and disadvantages were identified for the No Action Alternative within the I-70B West study corridor:

Advantages

- No business or residential relocations would be required.
- There would be no displacement of minority or low-income residents or employees.
- There would be no adverse impacts to the natural, cultural, or human environment.
- No delays or inconvenience as a result of roadway construction.

Disadvantages

- Does not meet the Purpose and Need for the project.
- Does not provide acceptable future traffic operations in the study corridor.
- Would not improve safety for all modes of travel in the study corridor.
- Is not compatible with the City of Grand Junction's Strategic Plan or the Mesa County Master Plan.
- Does not address lack of continuous pedestrian and bicycle facilities in the study corridor.
- Does not address safe and effective access for businesses and property owners in the study corridor.

2.6.2 Preferred Alternative

The Preferred Alternative is the result of a Context Sensitive Solution – or CSS – process, consistent with project goals. The CSS process involved all stakeholders, including municipalities, agencies, and the public, in a collaborative process to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. As such, this CSS approach considered the total context within which the transportation improvement project will exist.

The Preferred Alternative would provide six lanes of through travel throughout the I-70B West study corridor. The section of I-70B from 24 Road to Rimrock Avenue would be widened, additional turn lanes would be provided where warranted, and access would be controlled to improve through traffic operations and safety. The North Avenue interchange would be improved to provide additional through capacity, better traffic operations, access to businesses west of I-70B, and improved safety. The 1st Street and Grand Avenue intersection would be reconfigured and improved to include addi-

tional through capacity and turn lanes. The 1st/2nd/Ute/Pitkin area would be improved to upgrade operations to accommodate the third lane in each direction and improve safety. The 4th/5th/Ute/Pitkin area would be converted to one-way 4th and 5th Streets with additional turn lanes added to reduce vehicle conflicts and improve traffic operations. The Preferred Alternative would provide improved and continuous bicycle and pedestrian facilities. Existing bus stops on I-70B would also be improved.

Right-of-way and access considerations for the Preferred Alternative include:

- Commercial acquisitions/relocations: 1
- Residential acquisitions/relocations: 0
- Partial commercial property acquisitions: 39
- Partial residential property acquisitions: 0

2.6.2.1 Preferred Alternative Elements

Elements of the Preferred Alternative include:

- Access Management
- Intersection Improvements
- Safety Improvements
- Structures
- Lighting
- Urban Design/Aesthetics
- Pedestrian/Bicycle Facilities
- Bus Facilities

Access Management

Elements of the Preferred Alternative pertaining to access management are summarized below. Further discussion of access management relating to future land use changes can be found in the technical document *Access Management Guidelines for I-70B*. Further discussion of access management changes and impacts can be found in Section 3.4.2.2 and Section 3.5.

The Preferred Alternative would provide good local access compared to the other alternatives considered. Several existing I-70B accesses from adjacent properties would be closed. However, the Preferred Alternative would provide consolidated access points to improve safety, improve access capacity, facilitate local access, and better accommodate I-70B mobility.

Generally, in the 24 Road to Rimrock Avenue Section, the existing signals would remain in the Preferred Alternative, and the existing two full-movement accesses between signals would be replaced by one ¾ turn access for each side of I-70B. The raised median would provide control for this access management technique.

In the North Avenue interchange area, the existing U-turn from westbound I-70B to eastbound I-70B would be replaced by a ¾ movement further south at Teller Avenue combined with a frontage road to connect to existing businesses. The frontage road is considered temporary until construction of Teller Avenue. Following this construction, the intent is to provide access to businesses via the new Teller Avenue.

At 1st Street and Grand Avenue, because of proposed intersection improvements, some access changes would be required, but businesses would maintain a high level of access in the Preferred Alternative.

The Preferred Alternative also would provide increased mobility for the corridor as a whole, generally improving business access and business viability.

Intersection Improvements

The Preferred Alternative would provide additional capacity by adding a third through lane in each direction on I-70B at all intersections between 24 Road and 2nd Street. In addition to this improvement, several other design considerations are included in the Preferred Alternative. Notably, the following intersections would undergo major improvements:

- **1st Street and Grand Avenue** - This intersection would be reconfigured into a four-leg intersection instead of the existing five-leg. Also, the curve of the intersection would be improved to provide better through movements, and the number of turn lanes would be increased.
- **4th/5th/Ute/Pitkin** - 5th Street would be converted to one-way northbound between Ute and Pitkin, effectively creating a one-way loop around the park. This simplifies traffic operations in the area and eliminates the major conflicts of southbound 5th Street and eastbound Pitkin Avenue.

Minor improvements would be provided at other intersections not previously described. The following

improvements are in addition to the six through lanes on I-70B:

- **West entrance to Mesa Mall** – Right-in/right-out plus ¾ left-turn from eastbound I-70B. A median would be provided to prevent eastbound ramp traffic from using this access.
- **Center entrance to Mesa Mall** – Right-in/right-out with raised median.
- **East signalized entrance to Mesa Mall** – Turn lane and channelization improvements.
- **24 ½ Road** – Improved approach from south frontage road. Turn lane and channelization improvements.
- **24 ¾ Road** - Improved approach from south frontage road. Turn lane and channelization improvements.
- **Rimrock Avenue/Independent Avenue** – Minor channelization improvements.
- **Motor Street and Highway 6 Frontage Road** – The Highway 6 Frontage Road connection with the North Avenue ramp to I-70B would be closed for safety reasons. Motor Street would become an extension of the Highway 6 Frontage Road.
- **North Avenue and Highway 6 Frontage Road** – New left-turn lanes on I-70B in both directions.
- **1st Street and Ouray Avenue** – Because of the close proximity to the I-70B intersection, westbound traffic on Ouray would not be allowed to turn left onto 1st Street.
- **1st Street and White Avenue** – Full access at this intersection would be replaced with a ¾ turn access allowing northbound left turns only. This addresses existing safety problems at this intersection.

Safety Improvements

In addition to the safety enhancements inherent in improvements at intersections and access management, some modifications were made in the corridor to address other safety issues:

- At the I-70B and North Avenue interchange, the westbound North Avenue to westbound I-70B ramp would be rebuilt south of its current location to provide a longer weave distance for travelers from North Avenue wishing to turn left at Rimrock Avenue.
- The improved horizontal geometry at 1st Street and Grand Avenue would reduce vehicle conflicts and reduce the likelihood of side-swipe accidents for through vehicles.
- The curve at 1st Street and Ute Avenue would be improved, providing more room for vehicles navigating the sharp curve and improving sight distance.

Structures

Two structures would be required for construction of the Preferred Alternative:

- Widening of the westbound I-70B bridge at North Avenue, requiring installation of additional abutments and piers.
- A low retaining wall adjacent to the Rite-Aid at 1st Street and Grand Avenue.

Lighting

Lighting would be replaced in kind as part of the Preferred Alternative.

Urban Design/Aesthetics

Urban design/aesthetic considerations will be included in the final design of the Preferred Alternative. Opportunities for urban design include the raised median and the area between I-70B and frontage roads.

Pedestrian and Bicycle Facilities

Pedestrian and bicycle facilities are proposed on both sides of I-70B through most of the corridor. In the 24 Road to Rimrock Avenue section, sidewalks would be constructed on both sides of I-70B, except on the south side west of the Mesa Mall signalized entrance. In the North Avenue Section, sidewalks would be provided along the north side of I-70B and a separated multiuse trail would be provided on the south side specifically for transportation uses within the existing transportation right-of-way. In the 1st Street and Grand Avenue Section, sidewalks would be reconstructed as needed, and a new sidewalk connection provided from Ute Avenue to 1st Street. In the Ute/Pitkin Section, sidewalks would be reconstructed as needed, and an additional crosswalk would be added across Pitkin west of 2nd Street.

Bus Facilities

Also, the only existing bus stop on I-70B would be improved with the Preferred Alternative, with a concrete bus pad and shelter.

2.6.2.2 Preferred Alternative Advantages and Disadvantages

The advantages and disadvantages of the Preferred Alternative compared to the No Action Alternative include the following:

Advantages

- Meets the Purpose and Need for the project.
- Provides good traffic operations for the entire study corridor through the planning horizon (2030 forecast). See Section 3.5 for detailed traffic operations analysis.
- Improves connectivity, safety, and mobility options for pedestrians and bicyclists.
- Is compatible with local planning documents.
- Improves safety for all modes of travel.
- Provides good customer ingress for most businesses in the corridor even with the high level of access control.
- Provides safe and adequate access for business and property owners along the I-70B West Corridor.
- There would be no displacement of minority or low-income residents.
- Minimizes impacts to the natural and cultural environment.
- Minimizes business impacts and avoids residential impacts.

Disadvantages

- Results in right-of-way impacts to 40 commercial properties, including one business relocation.
- Results in temporary construction impacts.
- Results in minor environmental impacts to resources, including economic, wetlands, and a park.
- Changes known access routes to some businesses.
- Out-of-direction travel and additional turns and traffic signals required for one movement at 4th/

Figure 2-26 Preferred Alternative Sections

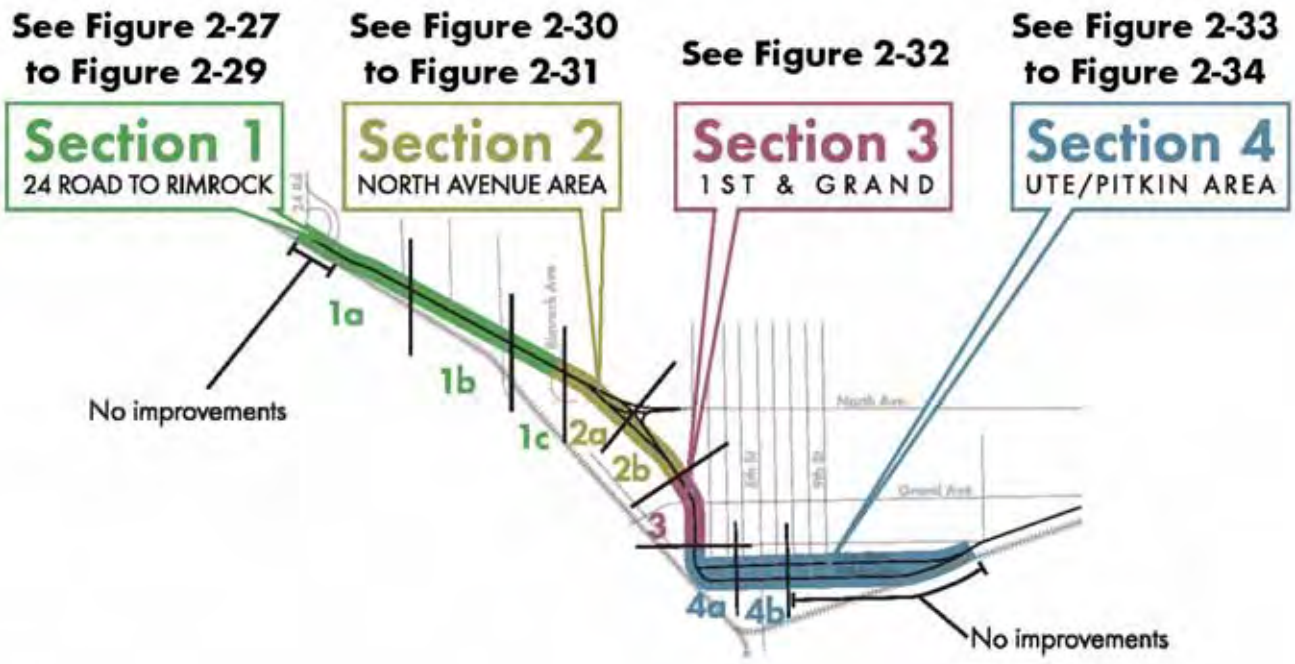


Figure 2-27 Preferred Alternative - Section 1a

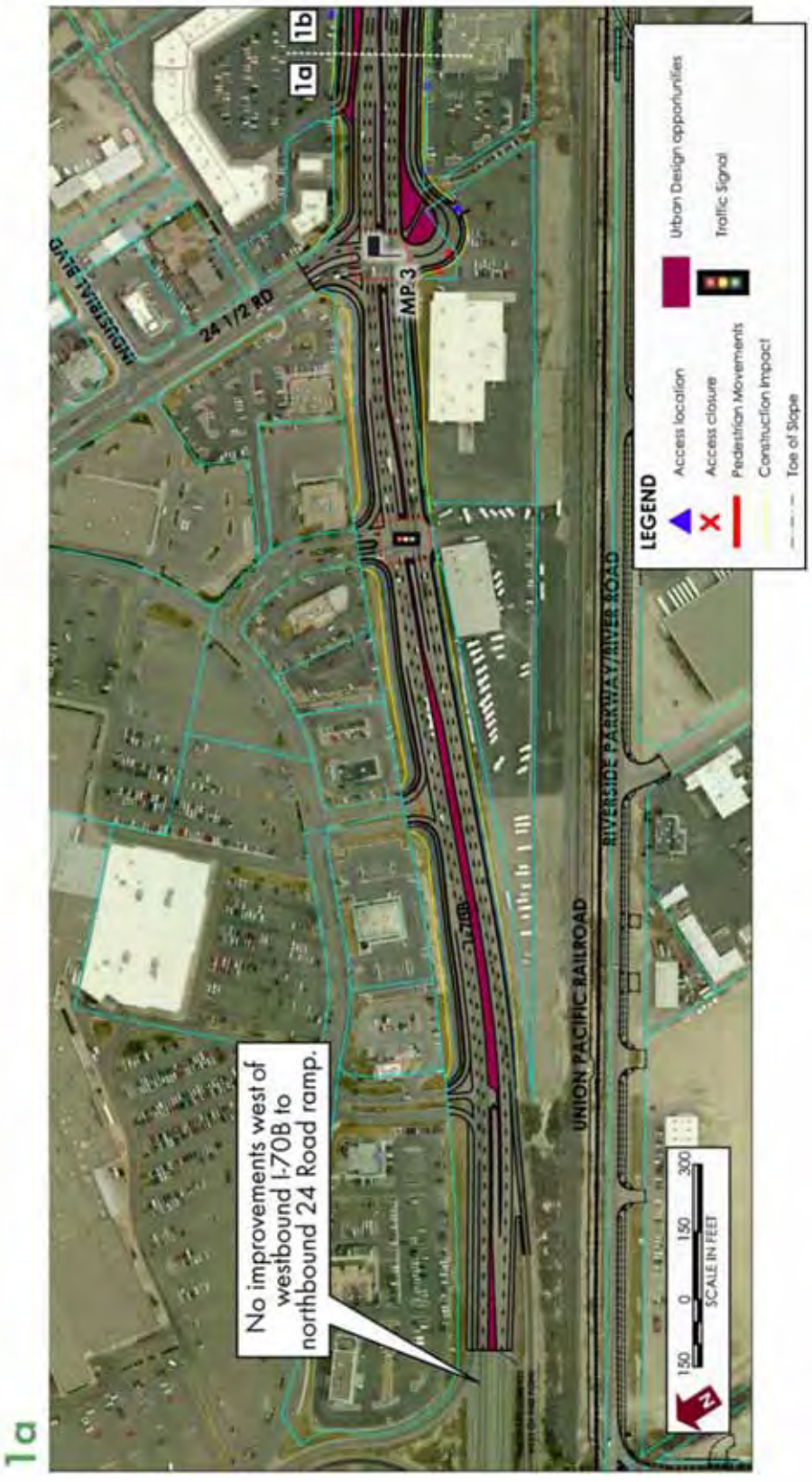


Figure 2-28 Preferred Alternative - Section 1b

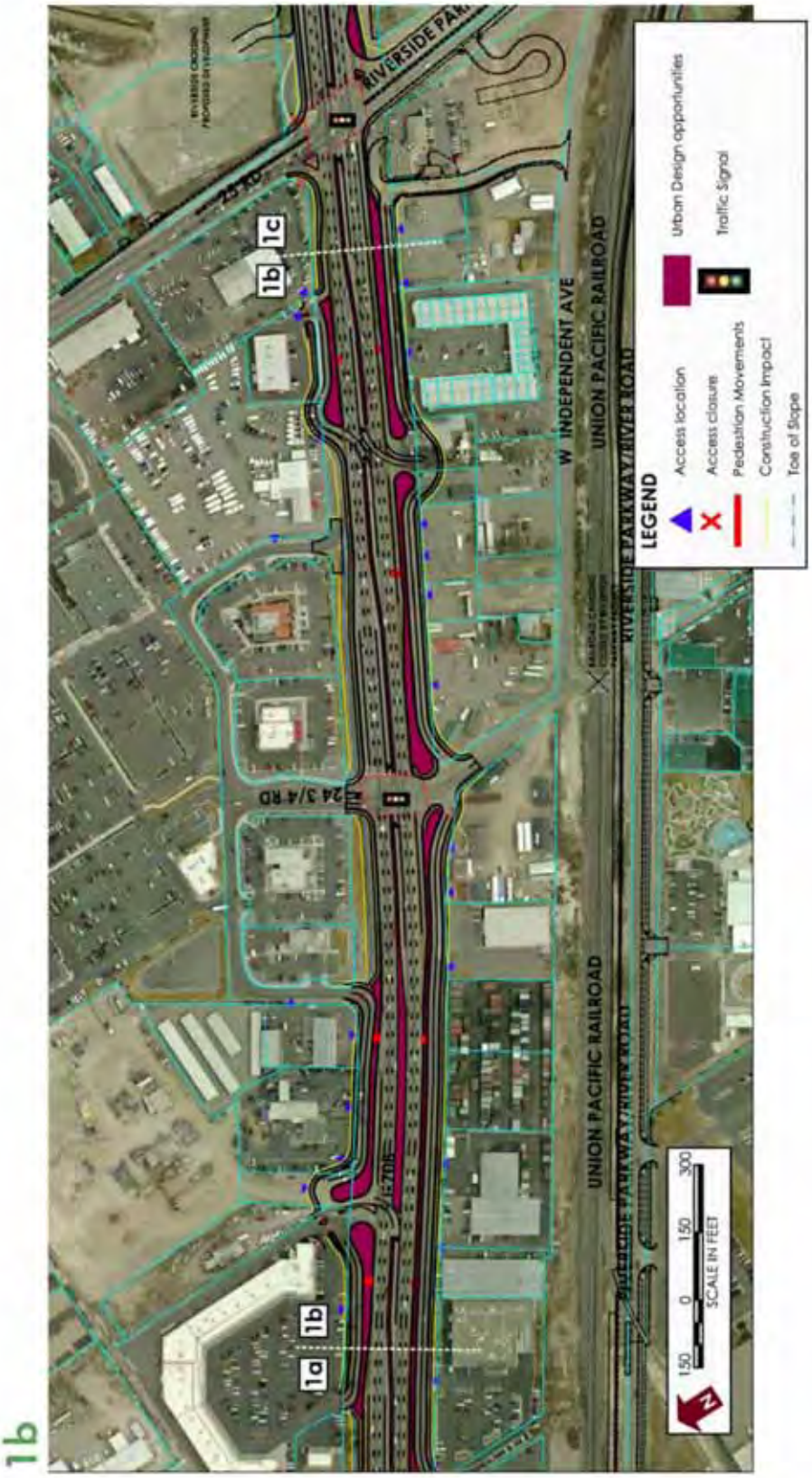


Figure 2-29 Preferred Alternative - Section 1c

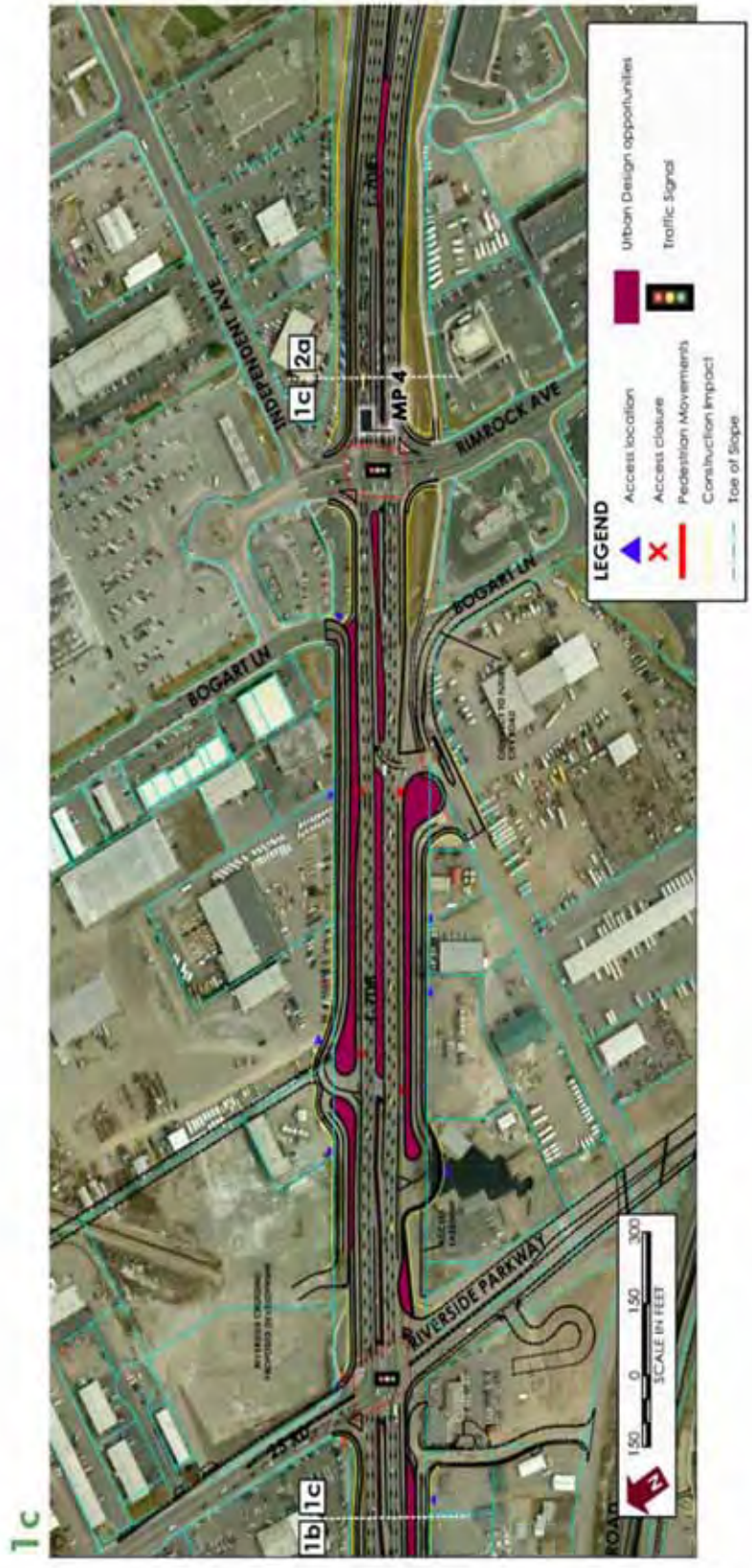
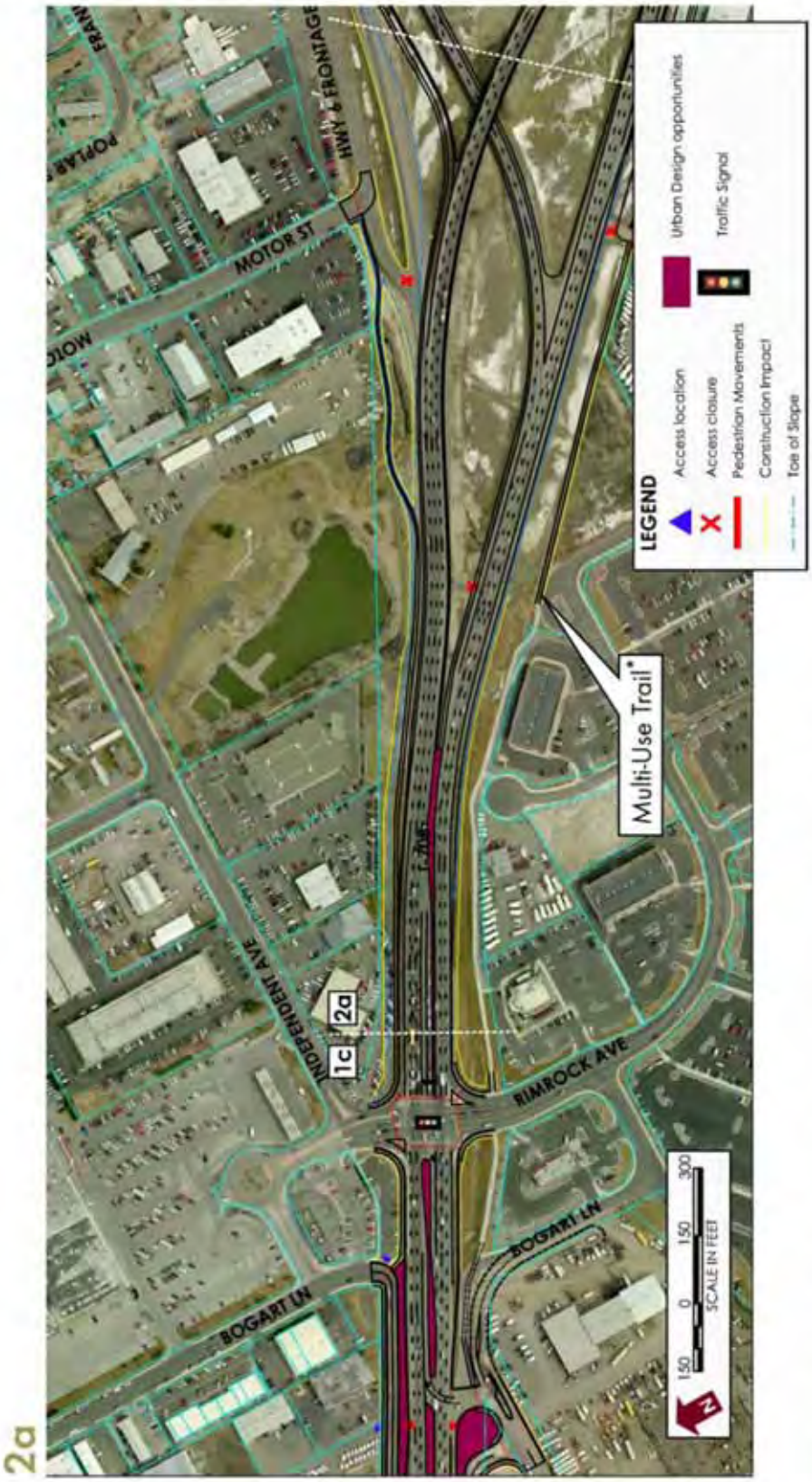
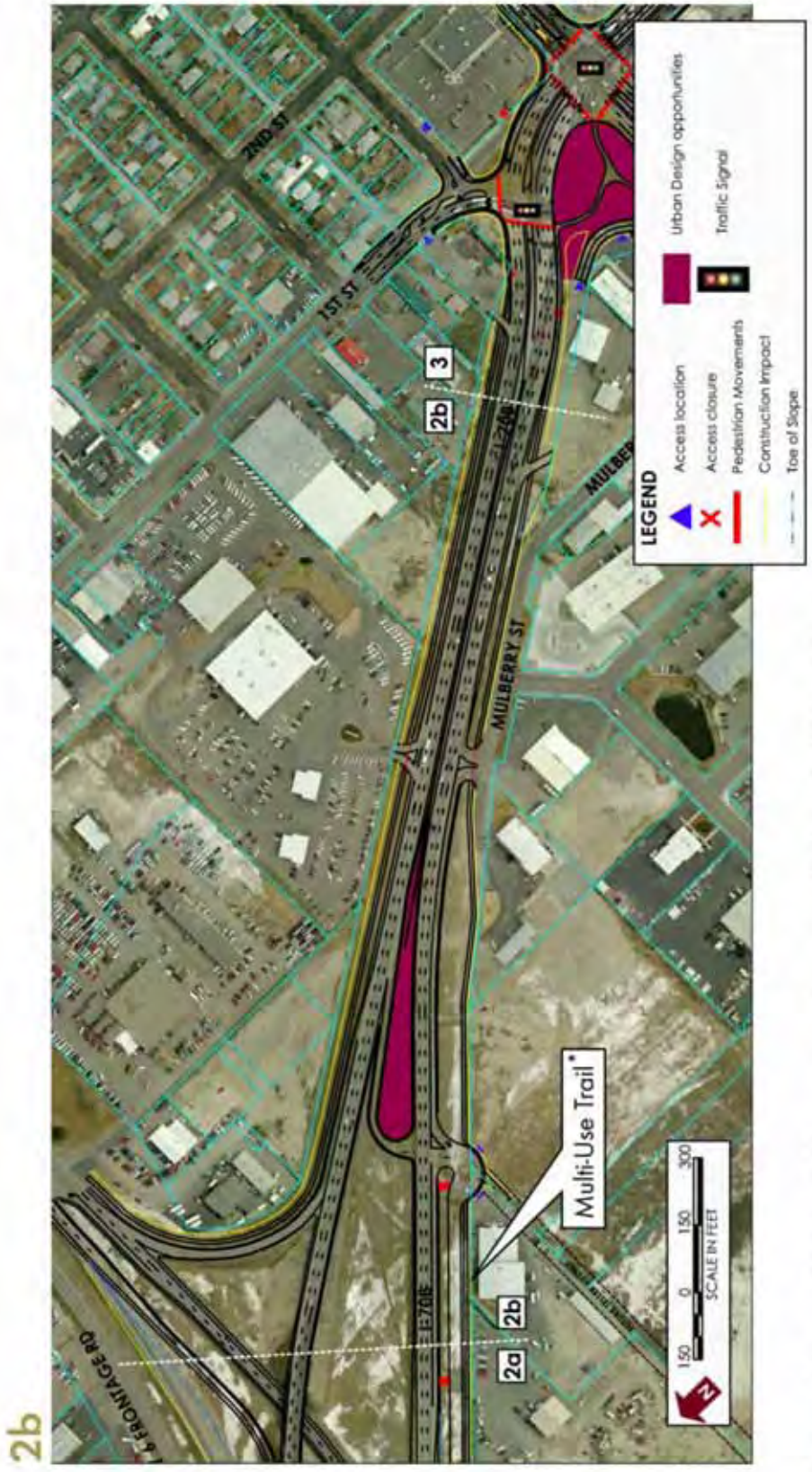


Figure 2-30 Preferred Alternative - Section 2a



*The multi-use trail is intended for transportation uses and is located within existing transportation right-of-way.

Figure 2-31 Preferred Alternative - Section 2b



*The multi-use trail is intended for transportation uses and is located within existing transportation right-of-way.

Figure 2-32 Preferred Alternative - Section 3

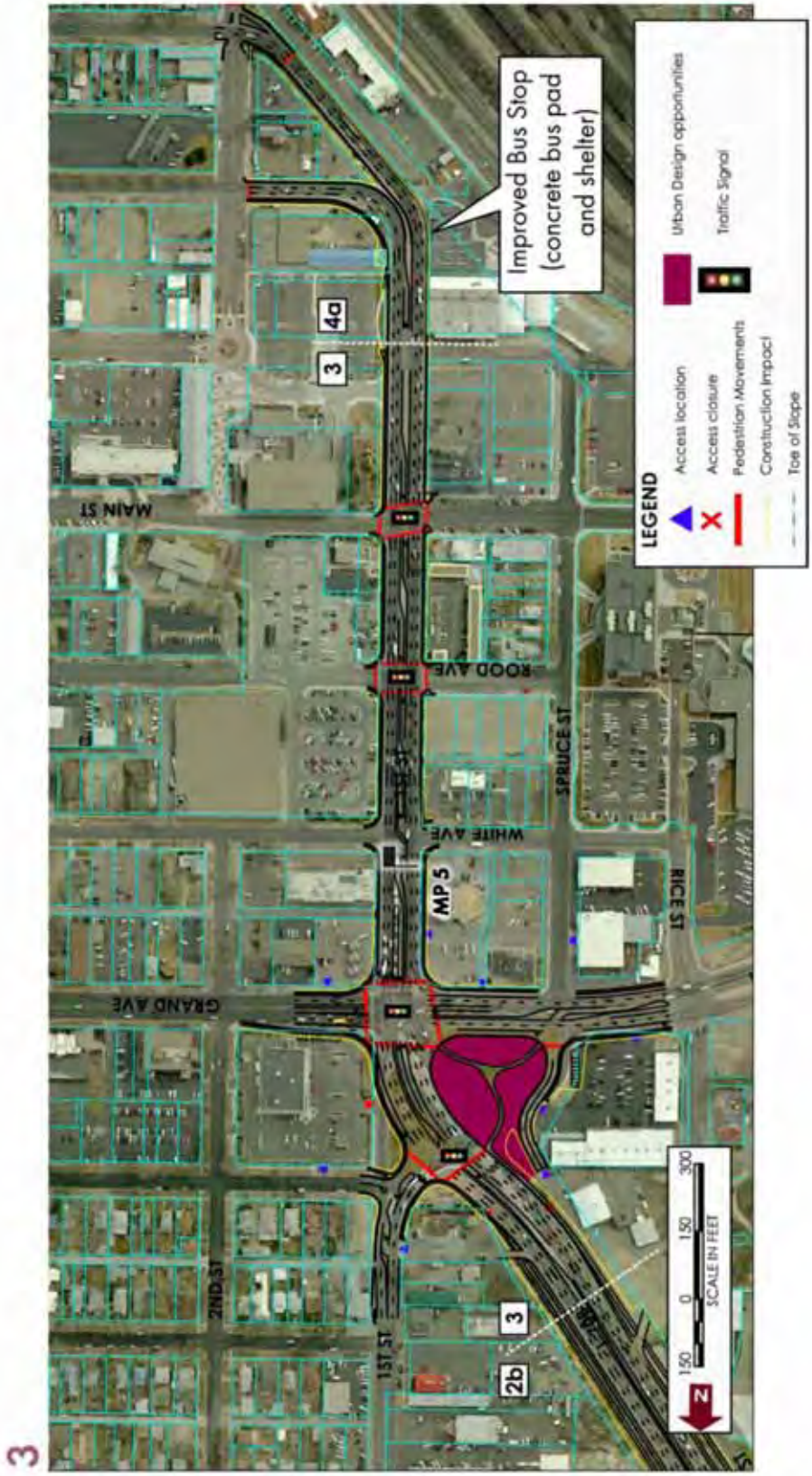


Figure 2-33 Preferred Alternative - Section 4a

Figure 2-34 Preferred Alternative - Section 4b

2.7 ESTIMATED PROJECT COSTS

The estimated conceptual cost range for the I-70B project is $35 million to $40 million. This is a total project cost that includes the following elements:

- Earthwork
- New Roadway Connection
- Bridges/Structures
- Drainage
- Traffic Control/Lighting
- Utilities/Force Account Utilities
- Contingencies/Unlisted Items
- Urban Design/Landscaping
- Construction Signing/Traffic Control
- Mobilization
- Right-of-Way/Easements
- Design Engineering
- Bicycle and Pedestrian Facilities
- Construction Engineering
- Construction Surveying
- Environmental Enhancements
- Environmental Compliance and Mitigation
- Public Participation

2.8 FUNDING AND PHASING

The Grand Valley Regional Transportation Committee has prioritized this project as the number one corridor project in the region in its 2030 RTP. The 2030 RTP and draft 2035 RTP both also state "CDOT expects to invest in the heavily traveled I-70B corridor to address congestion, signalization and other traffic management issues." The draft 2035 RTP also includes a Midterm Implementation Strategy over the first 10 years of the plan and I-70B was selected as one of five priority corridors for priority implementation (funding improvements).

The I-70B West study corridor is a state and federally funded project. A portion of this funding for design and construction is identified in the current Statewide Transportation Improvement Program (STIP) and Transportation Improvement Program (TIP) as part of the Regional Priority Program (RPP) beginning in FY 2008. Additional funding is identified in the Grand Junction - Mesa County Transportation Planning Region 2030 Fiscally Constrained Regional Transportation Plan.

Funding for the entire project will not be available at one time, so the project must be constructed in phases. At this time, the exact phasing scheme has not been developed. It will be developed during preliminary and final design based on more detailed cost estimates, available funding, and a matrix of the Purpose and Need benefits provided for various construction segments. Each phase will also be evaluated on how effective it is as a separate project. Phased construction projects could include improving one intersection or an entire segment of roadway. Phases could also include partial improvement of a section of roadway with the complete improvement part of a later phase.

Chapter 3: Affected Environment, Impacts, and Mitigation

This chapter describes the existing social, economic, and environmental setting for the study corridor that may be affected by the proposed improvements of the I-70B West project. This chapter also describes the environmental impacts that could occur as a result of implementation of either the No Action Alternative or the Preferred Alternative. Mitigation measures are identified for impacts associated with the Preferred Alternative.

All resources were reviewed for presence in the study corridor and for impacts. Based on the project description, data collection, field investigation, and evaluation, the following resources were not present in the study corridor or had no impacts: farmland; threatened, endangered, and sensitive species; wildlife and fisheries; and archaeological and paleontological resources. Information regarding these resources is summarized in Section 3.1 based on Technical Memoranda provided in **Appendix A**. All other resources listed below are fully assessed for impacts and described starting in Section 3.2.

Indirect effects were considered for resources most influenced by encroachment-alteration effects and induced growth. Therefore, indirect effects were considered for land use, social conditions, economic conditions, water resources, and vegetation. Other resources are not anticipated to have substantial indirect effects.

Potentially Affected Resources
Land Use and Zoning
Social/Environmental Justice
Economic
Pedestrian and Bicycle Facilities
Right-of-Way
Air Quality
Noise
Water Resources and Water Quality
Floodplains
Wetlands
Vegetation and Noxious Weeds
Visual Quality
Historic Properties
Parks and Recreation
Hazardous Materials

3.1 ENVIRONMENTAL RESOURCES NOT AFFECTED

3.1.1 Farmland

There are approximately 12 acres of soil in the study corridor classified as prime or unique farmland if irrigated or irrigated and drained. However, these soils are located in areas that are fully developed or within the Grand Junction *Census 2000* designated urban boundary. Therefore, these soils are not considered prime or unique, and there are no impacts to farmlands. The Natural Resources Conservation Service in Grand Junction concurred with this finding in a letter dated February 15, 2007. See the Farmlands Technical Memorandum in **Appendix A** for additional details.

3.1.2 Threatened, Endangered, and Sensitive Species

Federally threatened, endangered, or candidate species; state threatened and endangered species; and state species of special concern either are not present or are unlikely to occur in the study corridor. Although three species have been cited in literature and other sources to occur in the vicinity, including the Townsend's big eared bat, Botta's pocket gopher, and the longnose leopard lizard, impacts to these species would not occur due to the urban nature of the study corridor and lack of suitable habitat. There would be no impacts to the Colorado River or water depletion resulting in impacts to any threatened or endangered species. See the Threatened and Endangered Species Technical Memorandum in **Appendix A** for additional details.

3.1.3 Wildlife and Fisheries

The I-70B West study corridor is located within a highly developed, urbanized area with few resources available for wildlife or fish species and populations. Primary wildlife habitat and resources are provided by two small park areas (Whitman and Emerson Parks) near the east end of the study corridor and the Colorado Division of Wildlife (CDOW) maintained Westlake State Wildlife Area located on the north side of I-70B between Rimrock Avenue and Motor Street. All other wildlife habitat

is severely fragmented by existing roadways and development, and it can be assumed that current wildlife inhabitants have adapted for these living conditions. The only impacts to general wildlife habitat are anticipated in the form of minor habitat loss through vegetation removal due to construction activities for the roadway expansion between 24 Road and Ute/Pitkin Streets and at Whitman Park. Water bodies near the study corridor that may provide fisheries habitat include the Colorado River, Leach Creek, Ligraini Drain, and a CDOW maintained pond at Westlake State Wildlife Area. The Colorado River and Leach Creek are not located within the study corridor and would not be impacted by project activities. Ligraini Drain and the CDOW pond are located within the study corridor, however, neither would receive direct impacts resulting from project activities. No impacts to existing fisheries habitat are expected. See the Wildlife and Fisheries Technical Memorandum in **Appendix A** for additional details.

3.1.4 Archeological Resources

An archaeological inventory for prehistoric and historic archaeological resources was completed for the I-70B West study corridor. The inventory and file search did not reveal any prehistoric or historic archaeological resources. A finding of no historic properties affected for prehistoric and historic archaeological resources has been recommended. See the Archeological Technical Memorandum in **Appendix A** for additional details.

3.1.5 Paleontological Resources

No fossils were discovered during the field survey and no previously recorded fossil localities within the study corridor are recorded or found in the scientific or technical literature. However, the University of Colorado Museum and Denver Museum of Nature and Science have numerous recorded fossil localities in Colorado from Pleistocene-age surficial deposits like those present within the study corridor. Adverse impacts on significant paleontological resources resulting from construction are unlikely to occur because the construction-related ground disturbance would occur mostly at existing grade, and the study corridor is underlain by sedimentary deposits that are either too young to contain fossils, or have low paleontological sensitivity. If any subsurface bones or other potential fossils are found within the study corridor during construction, the CDOT Staff Paleontologist will be notified immediately to assess their significance and make further recommendations. See the Paleontological Technical Memorandum in **Appendix A** for additional details.

3.2 LAND USE AND ZONING

Land use and zoning were evaluated for parcels within 400 feet of either side of I-70B from 24 Road to 15th Street.

3.2.1 Existing Land Use

Land within the study corridor is fully developed and urban in nature. The Union Pacific Railroad and Colorado River parallel the southern boundary of the study corridor, creating a defining break in land uses. At the western end of the study corridor, both sides of I-70B have been developed with retail and commercial uses, including large retail associated with the Mesa Mall and "big box" establishments, such as Office Depot and Wal-Mart. Industrial uses are found along the south side of I-70B backed by a few isolated single-family residential structures along River Road near 25 Road. Land uses around the I-70B and North Avenue (US 6) interchange include mostly light industrial with some general retail and commercial services found directly adjacent to the interchange. South of this interchange to the intersection at 1st Street and Grand Avenue, land uses consist primarily of strip commercial development on either side of the highway.

From the 1st Street and Grand Avenue intersection south and along Ute and Pitkin Avenues to 11th Street, land use consists of a mix of commercial, residential, and civic uses. Development along this area is more consistent with the historic grid of the downtown area. Auto-related businesses (oil and lube, car wash, auto repair) are the predominant commercial enterprises within this portion of the study corridor. There are also numerous pawn shops and building supply companies. Civic uses along 1st Street are the Two Rivers Convention Center; and along Ute and Pitkin Avenues the Whitman Education Center, Museum of the West, Grand Junction fire and police stations, a Greyhound bus station, and two community parks: Whitman and Emerson.

From 12th Street to the project terminus at 15th Street, commercial uses are present along the north side of the study corridor, with mixed commercial and light industrial uses found along the south side of the roadway.

3.2.2 Existing Zoning

Zoning information for the study corridor was obtained from the City of Grand Junction, Department of Community Development. Nine zoning districts are identified along the study corridor. **Table 3-1** briefly describes each of these zoning districts.

As shown in **Figure 3-1**, business and commercial districts make up the predominant zoning in the study corridor. Very few parcels of land along I-70B are zoned for residential development. Along Ute and Pitkin Avenues, where there are currently residential land uses, no land is zoned for residential development. This may indicate that this area is in transition from mixed residential and commercial land use to predominantly business and commercial uses.

3.2.3 Future Land Use

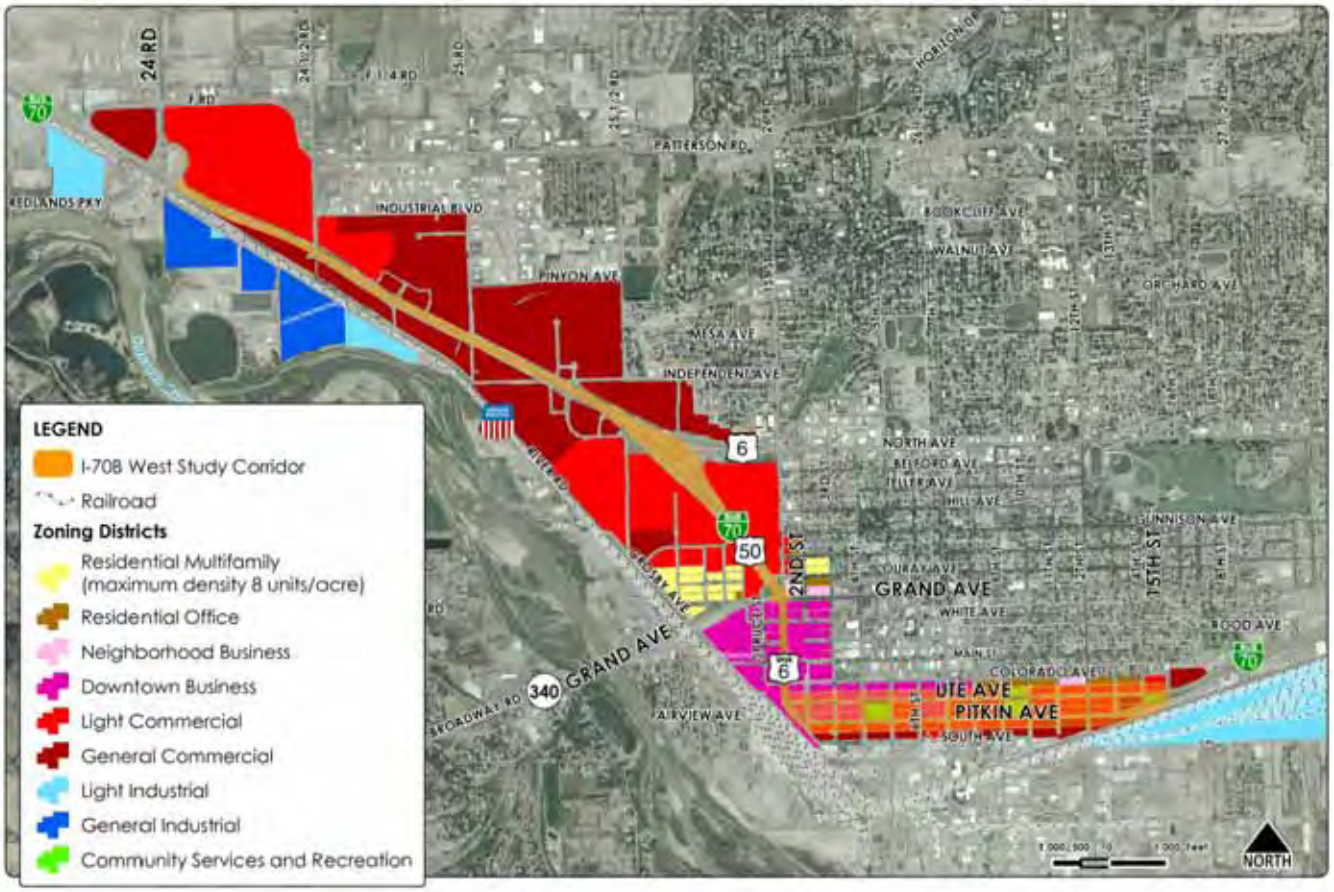
The I-70B West study corridor is entirely located within Grand Junction's city limits. The study corridor is also within the joint planning area and urban growth boundary established by the City of Grand Junction and Mesa County. The primary adopted land use plans providing general guidance for future development and growth in the study corridor are the *Grand Junction Growth Plan*, 1996, and the *Westside Downtown Redevelopment Plan*, 2004.

Table 3-1 Zoning Districts

Zoning District	Purpose
RMF-8: Residential Multifamily	To provide for medium-high density attached and detached dwellings, duplexes, townhouses, and multifamily units. Maximum density is 8 units per acre. Primary uses are: Attached and Detached Single-Family, Duplex, Townhouse, Multifamily, and Civic.
B-1: Neighborhood Business	To provide small areas for office and professional services combined with limited retail uses; a balance of residential and non-residential uses. Primary uses are: Offices, Retail, and Services.
B-2: Downtown Business	To provide concentrated downtown retail, service, office, and mixed uses not including major/regional shopping centers or large outdoor sales areas. Primary uses are: Offices, Retail, Civic, Government, Services, and Residential.
C-1: Light Commercial	To provide indoor retail, service, and office uses requiring direct or indirect arterial street access, and business and commercial development along arterials. Primary uses are: Offices, Retail, and Services.
C-2: General Commercial	To provide for commercial activities such as repair shops, wholesale businesses, warehousing, and retail sales with limited outdoor display of goods and even more limited outdoor operations. Primary uses are: General Retail and Services.
I-1: Light Industrial	To provide for areas of light fabrication, manufacturing, and industrial uses which are compatible with existing adjacent land uses, access to transportation, and the availability of public services and facilities. Primary uses are: Manufacturing, Office, and Commercial Services.
I-2: General Industrial	To provide areas of heavy and concentrated fabrication, manufacturing, and industrial uses which are compatible with adjacent uses, easy semi-tractor trailer access to the highway system and/or railroads and the availability of public services and facilities. Primary uses are: Manufacturing, Office, and Commercial Services.
CSR: Community Services and Recreation	To provide public and private recreational facilities, schools, fire stations, libraries, fairgrounds, and other public/institutional uses and facilities. Primary uses are: Parks, Open Space, Schools, Libraries, and Recreational Facilities.
RO: Residential Office	To provide low intensity, non-retail, neighborhood service, and office uses that are compatible with adjacent residential neighborhoods. Primary uses are: Professional Offices, Attached and Detached Single-Family, Duplex, Townhouse, Multifamily, and Civic.

Source: City of Grand Junction - Department of Community Development, 2006.

Figure 3-1 Zoning Districts



The *Grand Junction Growth Plan* focuses on the land use and development issues facing Grand Junction and surrounding areas. In May 2003, the future land use portion of the plan was updated. Future land uses identified for the study corridor include commercial and industrial between 24 Road and the intersection at 1st Street and Grand Avenue. Medium density residential units are planned north of Grand Avenue and west of I-70B. South of the intersection at 1st Street and Grand Avenue, commercial and public uses are planned. On either side of Ute and Pitkin Avenues, future land use is primarily commercial with a few parcels that are planned to accommodate existing public and park uses. Future land uses in the study corridor are consistent with the zoning classifications described above under Existing Zoning.

To further the goals and policies of the *Grand Junction Growth Plan*, the City of Grand Junction has adopted an infill and redevelopment program that provides incentives for redevelopment in certain geographic areas of the city. The majority of the study corridor (south of North Avenue) is located within a redevelopment area, defined by the City of Grand Junction as follows:

> "…an area in transition, comprised of not less than two acres, that contain buildings, improvements, or vacant lots that fail to exhibit an appropriate use of land or fail to generate housing, retail, or employment opportunities commensurate with the area's physical capacity and the planned use of the area as defined by the Growth Plan."

The *Westside Downtown Redevelopment Plan* is a joint project between the City of Grand Junction and Mesa County which provides direction for future development and redevelopment in the lower downtown area. The plan evaluates an area that is bounded on the north by Main Street, on the east by 5th Street, on the south by South Avenue, and on the west by the Union Pacific Railroad. This area includes the portion of the study corridor from the intersection at 1st Street through Ute and Pitkin Avenues to 5th Street.

Both short- and long-term preferred plans were identified through the public involvement and planning process associated with the *Westside Downtown Redevelopment Plan*. The short-term preferred plan involves minimal zoning changes (diversification of zoning to allow for mixed uses and some housing), minor modifications to the existing circulation system (road curvature improvements where Pitkin Avenue, Ute Avenue, and 1st Street join), implementation of architectural redevelopment guidelines, and landscape/streetscape improvements. The long-term preferred plan proposes that Ute and Pitkin Avenues be consolidated into a single urban boulevard. Land uses south of the boulevard would consist primarily of service uses (automobile, warehousing, and general commercial) with some land dedicated to retail and office uses. North of the boulevard land uses would consist of mixed-use (office, retail, housing, hotel), cultural (museums, restaurants, hotels), and the existing Whitman Park. The plan notes that these long-term recommendations create impacts that extend well beyond the area evaluated by the plan, and encourages a more comprehensive study of the entire downtown area.

3.2.4 Land Use and Zoning Impacts

3.2.4.1 No Action Alternative

Under the No Action Alternative, land uses are likely to remain unchanged as indicated by current development along the study corridor. The No Action Alternative would not impact existing commercial, industrial, or residential uses in the study corridor. Increased congestion associated with the No Action Alternative would cause continued safety issues related to accessing local businesses.

The No Action Alternative would not preclude the implementation of the long-term vision of the *Westside Downtown Redevelopment Plan*, 2004. It would, however, not support redevelopment of supporting land uses. This plan calls for the consolidation of Ute and Pitkin Avenues between 1st and 5th Streets into a single urban boulevard that would support primarily retail/commercial and cultural uses with limited housing.

3.2.4.2 Preferred Alternative

Construction of the Preferred Alternative would result in a direct conversion of one parcel from a commercial use to a transportation use. The acquisition of Watermark Spas would be required to accommodate the 3/4 access at this location converting 0.36 acre of commercial use to a transportation use. This impact is further discussed in Section 3.4, Economic and 3.7, Right-of-Way.

The Preferred Alternative is compatible with existing zoning and future land use as identified in the *Grand Junction Growth Plan* and the *Westside Downtown Redevelopment Plan*. It would not preclude the implementation of the long-term vision of the *Westside Downtown Redevelopment Plan*. It would support the community redevelopment program and the transition of Ute and Pitkin Avenues to a primarily commercial corridor.

Indirect effects to land use from the Preferred Alternative may include a more predictable development pattern along I-70 B west of 1st Street. Consolidation of access may cause new development to concentrate at access locations. Additionally, an improved transportation system could accelerate development of properties by developers seeking to take advantage of new infrastructure.

3.2.5 Land Use and Zoning Mitigation

No mitigation measures are necessary. See Section 3.7, Right-of-Way for mitigation measures associated with the acquisition of property.

3.3 SOCIAL CONDITIONS AND ENVIRONMENTAL JUSTICE

3.3.1 Existing and Forecasted Social Conditions

Population and housing statistics are described in general for Grand Junction and Mesa County. Housing and community facilities were evaluated in greater detail for an area that includes 400 feet on either side of I-70B between 24 Road and 15th Street.

3.3.1.1 General Population

In 1990 the City of Grand Junction had a population of 29,034. By 2000, the population had increased by 12,952 for a total population of 41,986. This represents an increase of 44.6% over the ten-year period. Net in-migration to the Grand Junction area typically accounts for over 80% of the population gain in any year (Grand Junction Economic Partnership, 2005). An overview of population statistics for Colorado, Mesa County, and Grand Junction is provided in **Table 3-2.**

Table 3-2 Population Statistics, 1990-2005

Location	1990	2000	2005	% Change 1990 to 2005
Colorado	3,294,394	4,301,261	4,562,244	38.5%
Mesa County	93,145	116,255	130,662	40.3%
Grand Junction	29,034	41,986	49,422	70.2%

Source: U.S. Census Bureau.

According to population forecasts prepared by the Colorado Department of Local Affairs - State Demography Office, Mesa County is expected to grow by 76% between 2004 and 2030 (from a population of about 127,800 persons in 2004 to a population of about 224,400 persons in 2030). As **Table 3-2** shows, growth in Grand Junction has been occurring more rapidly than in Mesa County. Although 2030 forecasts are not available for Grand Junction, it is reasonable to assume that future growth in Grand Junction will occur at a similar (if not greater) rate than what is expected for Mesa County as a whole.

3.3.1.2 Housing

Housing trends in Grand Junction correlate with increases in city and county population growth. An overview of housing characteristics in Mesa County and Grand Junction is provided in **Table 3-3.**

Table 3-3 Housing Characteristics, 2004

	Mesa County	Grand Junction
Households	50,507	20,467
Household Size	2.46	2.23
Housing Units	54,989	22,424
- Occupied	50,507	20,467
- Vacant	4,482	1,957
Vacancy Rate	8.15	8.73

Source: Colorado Department of Local Affairs - State Demography Office, October 2005.

Construction of new housing in Grand Junction has kept pace with population growth. In 2003 Grand Junction issued a total of 1,679 building permits, 748 (45%) of which were residential. Of these, 94% were for single-family units; 3% were for mobile homes; and 3% were for duplex, triplex, or larger family units. The number of residential building permits in Grand Junction has increased by 204 (38%) since 2000, from 544 in 2000 to 748 in 2003 (Mesa County Building Department, 2003).

As the average sales price of a single-family home in the Grand Junction area increased from $82,632 in 1993 to $170,915 in 2003, (a 107% increase over a ten-year period), so has the demand for affordable housing (Grand Junction Area Realtor Association; City of Grand Junction, 2003). Population growth in Grand Junction has substantially exceeded growth in the number of affordable housing units. According to the City of Grand Junction's 2001 Community Development Block Grant Program (CDBG), applicants on the lists for the limited number of existing assisted housing units can wait a year or more.

Housing in the study corridor consists primarily of detached single-family units that are more than 50 years old. There are approximately four single-family units located south of I-70B near 25 Road. There is also a small single-family neighborhood southwest of the inter-

section at 1st Street and Grand Avenue. Most of the homes in this neighborhood are located away from the area that would be affected by construction. Approximately 700 feet north of the study corridor at Independent Avenue and 25 ½ Road is the Westlake Mobile Home Park. The majority of housing in the study corridor is found along Ute and Pitkin Avenues. Here, single-family residences and duplex/triplex units are interspersed with commercial uses. According to Mesa County Parcel data, actual home values in the study corridor range from approximately $65,000 to approximately $100,000, well below the city average of $170,915.

3.3.1.3 Community Facilities

Many of the community facilities that serve the residents of the study corridor are located away from the immediate roadway area that would be affected by construction. These facilities include churches, post offices, bus stops, schools, libraries, and medical facilities. Community facilities within the study corridor are concentrated along Ute and Pitkin Avenues. These facilities include the Museum of Western Colorado, Whitman Education Center, Family Tree School (alternative middle school), Choices Community School (alternative education for at risk youth), Grand Junction Fire Station #1, Grand Junction Police Department, Mesa County Sheriff's Office, Greyhound Bus Station, and the Grand Valley Soup Kitchen. Community facilities within the study corridor are shown by location in **Figure 3-2**.

I-70B is a regional stop for shopping and services for populations between Denver and Salt Lake City. People travel from as far as Utah to access the cultural, medical, and retail services that are available in Grand Junction. I-70B also acts as the gateway into the downtown area of Grand Junction from the west.

3.3.2 Social Impacts

3.3.2.1 No Action Alternative

The No Action Alternative would have no effect on population growth or housing development within or adjacent to the study corridor. Worsening congestion on

Figure 3-2 Community Facilities

I-70B would make it increasingly difficult to access businesses, residences, and community facilities within the study corridor and throughout Grand Junction. Traffic, safety, and access problems would increase the number of traffic incidents and decrease emergency response times.

3.3.2.2 Preferred Alternative

Construction of the Preferred Alternative would not have a negative effect on population growth or housing development within or adjacent to the study corridor.

The Preferred Alternative would benefit residents within the study corridor by improving mobility, safety, and access to businesses, residences, and community facilities and services. The new configuration of the 1st Street and Grand Avenue intersection would improve traffic flow and provide safer access to residences north of the intersection. Residents would also benefit from the provision of crosswalks and pedestrian and bicycle facilities.

Under the Preferred Alternative, 5th Street would be converted to one-way northbound between Ute and Pitkin Avenues, effectively creating a one-way loop around Whitman Park. This would simplify traffic operations in the area and eliminate the major conflicts of southbound 5th Street and eastbound Pitkin Avenue, benefiting residents adjacent to Whitman Park. Some out-of-direction travel would be required as a result of the additional turns and traffic signals required for one movement at 4th/5th/Ute/Pitkin.

The Preferred Alternative would accommodate interregional traffic between Denver and Salt Lake City, strengthening Grand Junction as a regional service center.

During construction, temporary detours, out-of-direction travel and construction-related noise would impact residents throughout the study corridor. Impacts would be greatest for residents north of the 1st Street and Grand Avenue intersection and along Ute and Pitkin Avenues adjacent to Whitman Park.

Indirect effects to social resources may include slightly altering the travel patterns of commuters and shoppers as they more readily use the improved transportation system along I-70B. Improved sidewalks and pedestrian connections may also increase pedestrian dependency and mobility. Additionally, the new facility and associated landscaping could improve perceived quality of the urban environment.

3.3.3 Social Impact Mitigation

No mitigation measures are necessary. Good communication with emergency service providers, the community, and residents with regard to road delays, access, and special construction activities is recommended during the construction phase. This will be accomplished through radio and public announcements, newspaper notices, on-site signage, and the use of the City's and CDOT's Web sites. See Section 3.18 for mitigation measures associated with construction activities.

3.3.4 Environmental Justice

Environmental justice was first articulated as a national policy in 1994 when President Clinton signed Executive Order 12898 (E.O. 12898), Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. E.O. 12898 required federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations in the United States. The purpose of E.O. 12898 is to ensure that federally-assisted projects do not have disproportionately

Definitions

- *Disproportionately high or adverse effect is an adverse effect or impact that would be:*
  - *predominantly borne by minority and/or low-income population; or*
  - *will be suffered by the minority and/or low income population and is appreciably more severe or greater in magnitude than the adverse effect suffered by the non-protected population.*
- *Low-Income Population is defined as any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons who will be affected by a proposed action/project.*
- *Minority Population means a readily identifiable group of minority persons that live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient minority persons who will be affected by a proposed action/project.*

high and adverse human health or environmental effects on minority or low-income populations. For those projects that do, E.O. 12898 requires actions to avoid, minimize or mitigate such effects.

E.O. 12898 was enacted to reinforce Title VI of the Civil Rights Act of 1964, which states, "No person in the United States shall, on the grounds of race, color or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Subsequent Orders at the federal level, including U.S. Department of Transportation (DOT) Order 5610.2 Order To Address Environmental Justice in Minority Populations and Low-Income Populations (U.S. DOT, 1997) and FHWA Order 6640.23 Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (FHWA, 1998), have further defined the obligations outlined in Executive Order 12898.

On May 27, 2005, the Colorado Department of Transportation issued CDOT's Title VI and Environmental Justice Guidelines for NEPA Projects - Rev.3 to assist in interpreting environmental justice mandates. The guidance outlines the process for environmental justice analysis, including data collection, public involvement, impact analysis, and mitigation requirements. The analysis that follows was prepared in accordance with this and all other applicable guidance for addressing environmental justice.

3.3.4.1 Minority Populations and Minority-Owned Businesses

The discussion of minority populations begins with the analysis of *Census 2000* data at the block level. Minority populations are comprised of ethnic and/or racial minorities. As defined in FHWA Order 6640.23, a minority is a person who is Black, Hispanic, Asian American, American Indian, or Alaskan Native. It is important to note that census data does not list Hispanic as a racial category. Instead, Hispanic or Latino heritage is considered an ethnicity; a person of Hispanic of Latino origin can identify with any racial group. To avoid double counting, the total White, Non-Hispanic population of a geographic area is subtracted from the total population to generate the total minority population. The percentage of minorities is then compared to the city or county average. Any blocks with a higher percentage of minorities than the city average were considered in this analysis.

Grand Junction has a minority population of 14% (*Census 2000*). Twenty-seven blocks within or adjacent to the I-70B West study corridor contain minority populations above the city average. Two of these (Block 2003 in group 3 of Tract 3 and Block 1137 in group 1 of tract 9) contain populations of 1 person (100% minority) and 2 persons (50% minority), respectively. The block south of Pitkin Avenue (Block 1123 in Group 1 of Tract 9) contains a population of 31 persons, 18 of which (58%) are minorities. Only the eastern most edge of this block touches the study corridor. All of the households within this block are located more than 500 feet from the study corridor and would not be directly or indirectly affected by the construction of the proposed improvements.

As shown in **Figure 3-3**, the remaining 24 blocks are located in the vicinity of the 1st Street and Grand Avenue intersection and along Ute and Pitkin Avenues. These blocks contain minority populations between 19 and 100% and were evaluated for disproportionately high and adverse effects (Section 3.3.5, Environmental Justice Impacts). The blocks along Ute and Pitkin Avenues that do not contain minority populations primarily consist of city parks or retail/commercial enterprises.

The Colorado Minority Business Office (MBO) maintains a listing of minority business enterprises throughout Colorado. According to the state office at the time of this writing, there are no registered minority business enterprises in the vicinity of the study corridor.

Because the MBO only identifies businesses that register with the office, it is possible that some businesses in the study corridor are minority-owned. A site visit to the study corridor identified one business on Pitkin Avenue that appeared to be minority-owned (e.g., company name and signage were in Spanish).

Economic activity within the study corridor and the potential for economic impacts are described in Section 3.4, Economic Conditions. Impacts identified in this section are primarily beneficial and include improved access and mobility.

3.3.4.2 Low-Income Populations

For purposes of privacy, the census block group is the most detailed level of data that displays income information. FHWA Order 6640.23 defines low-income as "...a household income at or below the Department of Health and Human Services (HHS) poverty guidelines."

Figure 3-3 Minority Populations

A different threshold (e.g., U.S. Census Bureau poverty threshold or U.S. Department of Housing and Urban Development (HUD) CDBG income thresholds) may be utilized as long as it is not selectively implemented and is inclusive of all persons at or below the HHS poverty guidelines.

CDOT's recommended approach in determining low-income populations is to derive the low-income threshold from a combination of census average household size data and the income thresholds set annually by HUD for the distribution and allocations of CDBG funds. HUD thresholds are developed for counties (or in some cases, Metropolitan Statistical Areas [MSA]) by household size up to an eight-person household. The thresholds are based upon household income as a percentage of median household income (in this case, 30% of the Median Family Income). These thresholds are then adjusted to reflect the average household size of the city or county where the project is located.

The median family income in the Grand Junction MSA is $50,100 (HUD, 2006). In Grand Junction, the average household size is 2.23 persons. The income limits for 30% of average median income (AMI) for a household size of 2.23 persons is $13,318. Since census income statistics are divided into increments of $5,000, the income threshold of $15,000 is used. In Grand Junction, 21% of households fall below the $15,000 threshold. Any census block groups within the study corridor where more than 21% of households fall below the $15,000 threshold were considered in this analysis.

Eight block groups encompass the study corridor, and include more than 3,506 households. Of these, seven contain a higher percentage of low-income households than the city. All of these block groups extend well beyond the study corridor. In Block Groups 3 and 4 of Tract 4, none of these households are located within the study corridor. The Westlake Mobile Home Park is located north of the study corridor in Block Group 3 of Tract 4. Block groups with low-income populations are shown by location in **Figure** 3-4.

Figure 3-4 Low-Income Populations

A site visit to the study corridor revealed the presence of multiple facilities that typically serve low-income populations along Ute and Pitkin Avenues. These include the Salvation Army, Grand Valley Catholic Outreach Soup Kitchen, pawn shops, and a Greyhound bus station.

In summary, low-income populations, as defined by CDOT guidance, are present within the study corridor at the following locations:

- Along Ute and Pitkin Avenues and cross streets between 1st and 15th Streets.
- West of the 1st Street and Grand Avenue intersection.
- South of I-70B at 25 Road.

These populations were evaluated for disproportionately high and adverse effects (Section 3.3.5, Environmental Justice Impacts).

3.3.4.3 Specialized Outreach

The public involvement process included special outreach to Spanish speaking community members.

Specialized outreach to minority and low-income populations was conducted as part of the public involvement process to gather comments and identify concerns regarding the project. Specialized outreach activities included project mailings, which announced upcoming project activities; news releases (including broadcast on KEXO the Spanish language radio station); Spanish translation (at public open houses and for project mailings); and informational booths at the local Farmers Market. Community leaders were also identified to help guide outreach activities and distribute project information.

On November 16th, 2006, a meeting specifically for Spanish speaking community members was held at St. Joseph's Catholic Church. Seven Spanish speaking persons attended this meeting. The meeting was conducted

in Spanish and gave attendees an opportunity to provide comments and review the information presented at the first open house.

Prior to public open houses, flyers were distributed in both English and Spanish to residences throughout the study corridor and provided at the following key locations:

- Grand Valley Catholic Outreach Soup Kitchen
- Westlake Mobile Home Park Office
- Whitman Education Center
- Museum of the West
- Greyhound Bus Station
- Emerson Administrative Building
- Salvation Army
- Riverside Neighborhood Community Center
- Riverside Neighborhood Convenience Store
- Latin-Anglo Alliance
- St. Joseph's Catholic Church
- Marillac Clinic
- Nisely Elementary School (at ESL parent meetings)
- Shiner's Car Wash
- Immigration Coalition
- Riverside Task Force

Out of the 158 persons in attendance at the public open houses, 15 were from areas identified as minority or low-income (Chapter 4, Table 4-2). General public involvement outreach (use of the City's Web site, project announcements in the City's monthly newsletter, media advisories, etc.) was made to minority and low-income populations in the study corridor. These activities are detailed in Chapter 4.

The principal concerns identified by minority and low-income residents in the study corridor during the public scoping meeting included safety in the corridor, traffic congestion, and property acquisition. These concerns were carefully considered by the project team and resulted in a design that reduced congestion and improved safety near the 5th street/Pitkin Avenue intersection, where minority and low-income populations are present.

3.3.5 Environmental Justice Impacts

3.3.5.1 No Action Alternative

There would be no displacement of minority or low-income residents, businesses, or employees. Traffic congestion would worsen in the study corridor, hindering access to housing, businesses, community facilities, and the provision of emergency services for minority and low-income populations, as well as the overall community.

The noise analysis (Section 3.9) finds that 2030 noise levels would range from 51 to 70 dB(A), exceeding 66 dB(A) at 26 receptor locations representing 48 single-family residences on Ute and Pitkin Avenues, all of which are located within minority and low-income areas. However, existing noise levels range from 64.8 to 67.6 dB(A), representing no perceptible change compared to 2030 noise levels. The No Action Alternative does not include an increase in capacity along Ute and Pitkin Avenues. The 2030 noise impacts along Ute and Pitkin Avenues are a result of existing conditions.

Because impacts would either be distributed across the community or are an existing condition, they would not be predominantly borne by minority and/or low-income populations. Nor would they be suffered by the minority and/or low-income population and be appreciably more severe or greater in magnitude than the impacts suffered by the non-minority/non-low-income population. Therefore, the No Action Alternative would not result in disproportionately high and adverse impacts to minority or low-income populations.

3.3.5.2 Preferred Alternative

The Preferred Alternative would not create a disproportionately high and adverse effect on minority or low-income populations in the study corridor.

The Preferred Alternative would benefit minority and low-income residents within the study corridor, as well as the overall community, by improving mobility, safety, and access to businesses, residences, and community facilities, and services. The new configuration of the 1st Street and Grand Avenue intersection would improve traffic flow and provide safer access to minority and low-income residences north and east of the intersection. These residents would also benefit from the provision of

crosswalks and improved pedestrian facilities. Increased capacity and access improvements would similarly benefit residents south of I-70B near 25 Road.

The Preferred Alternative would require the relocation of one business (Watermark Spas and Pools, Inc.). Representatives from the Project Team met several times with the business owner to discuss the project and receive input. Although the business owner prefers not to be relocated, he indicated that he understood the reasoning and right-of-way process. Watermark Spas is not minority owned and does not provide employment, goods, or services that are uniquely important to minority or low-income populations.

Nine businesses would lose some existing parking spaces (Section 3.4, Table 3-5). This would not result in relocation, affect business operations, or impact minority and low-income populations in the study corridor. Because these businesses are located in a commercial corridor, neighborhood impacts would not occur. Affected businesses are not minority owned.

There would be no displacement of minority or low-income residents with the Preferred Alternative.

The noise analysis finds that 2030 noise levels for the Preferred Alternative would range from 51 to 71 dB(A), exceeding 66 dB(A) at 26 receptor locations representing 48 single-family residences on Ute and Pitkin Avenues, all of which are located within minority and low-income areas. However, east of 1st Avenue, the Preferred Alternative is limited to intersection improvements and would not include an increase in capacity. As a result, 2030 noise impacts along Ute and Pitkin Avenues are an existing condition and would not be caused by the project. Implementation of the Preferred Alternative would not contribute incrementally to this existing impact.

The Preferred Alternative would result in temporary impacts to minority and low-income populations and the overall community from increased dust, dirt, noise, and traffic and access disruptions during the construction process. No other impacts to minority and/or low-income populations are anticipated to result from the implementation of the Preferred Alternative.

To summarize, improvements in mobility, safety, and access would benefit minority and low-income populations within the study corridor. No minority-owned businesses or employees would be displaced, and no residential relocations would occur. Noise impacts are an existing condition and would not be caused by the Preferred Alternative. Construction-related impacts would be temporary in duration and would affect both minority and low-income and non-minority and non-low-income populations alike. Because impacts would either be distributed across the community or are an existing condition, they would not be predominantly borne by minority and/or low-income populations. Nor would they be suffered by the minority and/or low-income population and be appreciably more severe or greater in magnitude than the impacts suffered by the non-minority/non-low-income population. Therefore, the Preferred Alternative would not result in disproportionately high and adverse impacts to minority or low-income populations.

3.3.6 Environmental Justice Mitigation

The Preferred Alternative would not result in disproportionately high and adverse impacts to minority or low-income populations. As a result, no mitigation measures are necessary. See Section 3.7.3, Right-of-Way, for mitigation measures associated with the acquisition of property; Section 3.9.3 for mitigation measures associated with noise impacts; and Section 3.18, for mitigation measures associated with construction activities.

3.4 ECONOMIC CONDITIONS

3.4.1 Existing Conditions

In this section, economic conditions are generally described for Grand Junction and Mesa County. Local business and economic activities are evaluated in greater detail for an area that includes 400 feet on either side of I-70B from 24 Road to 15th Street.

Economic trends for Mesa County and the City of Grand Junction are provided in **Table 3-4**.

As **Table 3-4** shows, Grand Junction and Mesa County have experienced strong economic growth over the 15 years from 1990 to 2005. According to Grand Junction Economic Partnership, Grand Junction's labor force is now the sixth largest in the state and is expanding. The Demography Office of the Colorado Department of Local Affairs, forecasts a labor force of 120,344 in Mesa County in 2030, almost double the labor force for 2005.

Table 3-4 Economic Trends,1990-2005

	Grand Junction			Mesa County			
	1990	2000	% Change 1990-2000	1990	2000	% Change 1990-2000	2005
Population	29,034	41,986	45	93,145	116,255	25	126,588
Per Capita Income	11,723	19,692	68	11,850	18,715	58	21,318
Median Household Income (Dollars)	19,042	33,152	74	23,698	35,864	51	39,487
Labor Force (civilian)	13,355	21,149	58	44,329	58,371	32	66,747
Employment	12,216	19,892	63	41,219	55,046	34	62,359
Unemployment	1,139	1,257	10	3,110	3,325	7	4,388
% of Persons Below Poverty*	21	12	-43	15	10	-33	13

Source: U.S. Census Bureau, 1990 and 2000; U.S. Census Bureau, American Community Survey, 2005 (only available for Mesa County).

** The Percentage of Persons Below Poverty Level is determined by thresholds developed by the Social Security Administration and applied by the U.S. Census Bureau. These differ from the regional income thresholds developed by the U.S. Department of Housing and Urban Development for Households.*

Originally based in mining and agriculture, Grand Junction's economy diversified substantially from 1990 to 2005. Today, the local and regional economy is based on destination-oriented recreation and growing retirement communities. A strong service sector also exists due to the area being the major market between Salt Lake City and Denver. Health and medical services, construction, business, and professional services provide resources to neighboring areas in Colorado and Utah, creating a market area of approximately 500,000 people. The area's manufacturing base includes semiconductor equipment, plastics, bicycle parts, as well as more traditional manufacturing such as metal production, machinery, chemicals, and transportation equipment (Grand Junction Economic Partnership, 2002).

According to the Colorado Department of Labor and Employment and Grand Junction Economic Partnership, the top employers in Mesa County include Mesa County Valley School District (2,600 employees), St. Mary's Hospital and Medical Center (2,000 employees), Mesa State College (1,250 employees), State of Colorado (982 employees), Mesa County (925 employees), and Wal-Mart (910 employees).

I-70B is an important regional commercial corridor that provides access to most of Grand Junction's commercial and business areas. In the western portion of the study corridor between the Mesa Mall and Rimrock Avenue, large retail developments (many associated with the Mesa Mall), "big box" retail, and smaller commercial establishments are located along the north side of I-70B. Along the south side of I-70B, "big box" retail is interspersed with light industrial and commercial establishments. There are approximately 13 access points from I-70B and adjacent frontage roads to these establishments (3 of these provide access to the Mesa Mall). Over the last 20 years this area has undergone redevelopment from primarily industrial enterprises to retail/commercial and "big box" establishments, a trend that continues today.

Between Rimrock Avenue and the split into one-way couplets at 1st Street and Ute and Pitkin Avenues, auto-oriented commercial and retail establishments are present on either side of the roadway. Commercial enterprises include gas stations, drug stores, tire shops, fast food, and a variety of small businesses. There are numerous entrances along I-70B that provide access to these businesses. Also, the Two Rivers Convention Center is located on the east side.

In the eastern portion of the study corridor along Ute and Pitkin Avenues between 1st and 15th Streets, commercial establishments are interspersed with residential and civic land uses. Auto-related businesses (oil and

lube, car wash, auto repair) are the predominant commercial enterprises. There are also numerous pawn shops and building supply companies. Closer to 15th Street, some light industry is located along the south side of the roadway adjacent to the railroad. There are numerous entrances along Ute and Pitkin Avenues that provide access to these businesses.

Substantial redevelopment is planned along Ute and Pitkin Avenues. Grand Junction's *Westside Downtown Redevelopment Plan* proposes that Ute and Pitkin Avenues be consolidated into a single roadway (urban boulevard). South of the urban boulevard, incompatible land uses would be redeveloped to accommodate commercial, retail and office establishments. North of the urban boulevard, incompatible land uses would be redeveloped to accommodate mixed-use (office, retail, housing, hotel) and cultural facilities (museums, restaurants, hotels).

3.4.2 Economic Impacts

3.4.2.1 No Action Alternative

No land acquisitions or business relocations in the study corridor would result from the No Action Alternative. Worsening congestion on I-70B would make it increasingly difficult to access businesses within the study corridor and throughout Grand Junction. Safety concerns would increase with congestion as a result of the large number of midpoint access locations leading to and from businesses along I-70B. These impacts would create less favorable conditions for businesses within the study corridor.

3.4.2.2 Preferred Alternative

Individual meetings were held with businesses within the study corridor to discuss and get input on the project.

The Preferred Alternative would accommodate increasing inter-regional traffic, strengthening Grand Junction as a regional center for employment and services. Businesses along I-70B would benefit from safety and mobility improvements, the provision of urban design treatments, and improved pedestrian and bicycle facilities.

The Preferred Alternative would require the relocation of one business, Watermark Spas and Pools, Inc. Repossessed Manufactured Homes operates on two parcels; parts of one parcel would be acquired for the Preferred Alternative. This business would not have to be relocated and would be able to continue to operate on the remaining parcels.

As described in **Table 3-5**, some businesses would lose existing parking spaces. This would not result in relocation or affect business operations.

During construction, temporary detours, out-of-direction travel, access changes, disruptions to visibility, and construction-related noise would impact businesses throughout the study corridor. Impacts would be greatest for businesses in the western portion of the study corridor, where two additional lanes would be constructed.

Several access changes are required to improve safety and protect the free flow of the highway. The Preferred Alternative would provide increased mobility for the corridor as a whole, generally improving business access and business viability. Generally, desination type commercial businesses, which constitute the majority of businesses in the 24 Road to Rimrock section, are affected less by access restrictions. Other businesses, like gas stations and fast food restaurants, rely on pass-by traffic and a greater level of direct access. No businesses would lose access as a result of the Preferred Alternative.

In general, between 24 Road and the 1st Street and Grand Avenue intersection area, access points would be consolidated and provided along frontage roads. These changes are described in **Table 3-5** for each section. Refer to Chapter 2 for graphics of the Preferred Alternative, including access changes.

Indirect economic effects may include more business activity along the I-70 B corridor as businesses and development seek to take advantage of the new infrastructure. The perceived improvements in urban quality may also increase the amount of people and services in the area. This could pull some existing businesses and shoppers away from other established locations in the city, reducing economic activity in those areas.

Table 3-5 Economic Impacts

24 Road to 24 ½ Road	
Businesses Impacted	• North side - Mesa Mall, Krispy Kreme, Olive Garden, Taco Bell, Outback, Wendy's, McDonalds, Red Lobster. • South side - Continental RV, Office Depot.
Access Changes	• The western full movement access at Mesa Mall would be converted to a ¾ access and access would be restricted from the 24 Road to I-70B eastbound on ramp. The middle full movement access to Mesa Mall would be converted to a right-in/right-out (RIRO) access. Movements would be controlled by the raised median on I-70B. The signals at the east Mesa Mall entrance and 24½ Road would remain.
Impacts	• Improves safety for all movements, especially through movements on I-70B. • Access to and from eastbound I-70B at the two western Mesa Mall access points would be eliminated, and traffic making this movement would be rerouted to the signal at the east entrance. • Access to Office Depot would be consolidated and Office Depot would lose 10 parking spaces (about 10% of total).
24 ½ Road to 24 ¾ Road	
Businesses Impacted	• North side - Valley Plaza, Pier 1 Imports, Shiners Car Wash, Carl's Junior, Big O Tires. • South side - Circuit City, Mor Storage, Rex Appliances, Golden Villa Homes.
Access Changes	• The full movement access at the 1/3 points between 24½ Road and 24¾ Road would be eliminated. A ¾ access for the north side would be provided at the mid-point of the segment. On the south side, the frontage road would be rebuilt and accessed from both 24½ Road and 24¾ Road, with no direct access from I-70B.
Impacts	• Improves safety for all movements, especially through movements on I-70B. • Provides good inbound access to most businesses on the north side. • Establishes access points for future property consolidation and redevelopment. • Egress to eastbound I-70B from the north side requires travel through site or U-turn on I-70B. • Business access on south side limited to access provided at 24½ Road and 24¾ Road (signals). • Valley Plaza would lose 6 parking spaces (about 3% of total). • Shiners Carwash would lose 11 parking spaces (about 20% of total). • Golden Villa Homes would lose 2 parking spaces currently on CDOT right-of-way (about 20% of total).
24 ¾ Road to Rimrock Avenue	
Businesses Impacted	• North side - Carino's, Marine Max, Holman House Furniture, Rocky Mountain Subaru, Pine Country Trailers, Auto Zone, Country Buffet. • South side - Ace Homes, Watermark Spas, Cottonwood Mall, Guerdon Village, Coldwell Banker, Palm Harbor Homes, LOCO GC Gascard, Cottonwood Liquors, Conoco.
Access Changes	• The full movement access at the 1/3 points between the signals at 24 ¾ Road, 25 Road, and Rimrock Avenue would be eliminated, and ¾ access to the frontage road on both the north and south sides would be provided at or near the mid-point of the segments. A right-in access on the north side would be provided near the Subaru dealership. A RIRO access on the south side would be provided near Palm Harbor Homes.

Table 3-5 Economic Impacts (Continued)

24 ¾ Road to Rimrock Avenue	
Impacts	• Improves safety for all movements, especially through movements on I-70B. • Provides good inbound access to most businesses. • Egress to eastbound I-70B from the north side and westbound I-70B from the south side requires travel to signalized intersection or U-turn on I-70B. • Need to reconstruct driveways or parking areas to match access points. • Requires the acquisition of Watermark Spas on the south side. • Marine Max would lose 8 parking spaces (about 24% of total). • Pine County Trailers would lose 4 parking spaces (about 8% of total). • Two modular show homes at Palm Harbor Homes would need to be moved on-site.
I-70B/North Avenue Interchange Area	
Businesses Impacted	• North side of North Avenue - Dana Auto Sales, Chrysler-Jeep Used Auto Sales. • Southwest side of I-70B - Gibson RV, Grand Valley Auto, Abbey Carpet.
Access Changes	• With the reconstruction of the North Avenue/I-70B interchange, access to properties adjacent to the interchange would be changed. The Highway 6 Frontage Road would no longer access I-70B on the west and would curve onto Motor Street. The existing U-turn provided just west of the North Avenue on-ramp from westbound to eastbound I-70B would be eliminated. Access to the businesses on the southwest side would be consolidated into a single ¾ access south of Abbey Carpet with a frontage road to Gibson RV and Grand Valley Auto.
Impacts	• Improves safety for all movements, especially through movements on I-70B. • Provides good inbound access to most businesses. • A U-turn access to businesses on the southwest side from North Avenue and I-70B is closed. This movement must be made from either a U-turn at Rimrock Avenue or a new frontage road access with connection to I-70B.
1st Street and Grand Avenue Area	
Businesses Impacted	• Quizno's (closed), Rite-Aid, Mesa Music, Fly'n Roosters, Nancy's Pizza, two Conoco Gas Stations, Burger King, World Savings Bank, Value Lodge Motel, and Mesa Pawn.
Access Changes	• Access at Quizno's with I-70B would be converted to a right-out-only access. Access on 1st Street would be maintained. The access to Rite-Aid on 1st Street would be closed due to the realignment of 1st Street. The access to Grand Central Plaza on I-70B would be closed and access would be provided from Grand Avenue/Highway 340 at Spruce Street. A right-in-only access to Mesa Music would be provided approximately 600 feet north of 1st Street. A ¾ access at 1st Street and White Avenue would limit access to the Value Lodge to RIRO and left-in.
Impacts	• Improves safety for all movements, especially through movements on I-70B. • Businesses retain high level of access. • Access to businesses north of Grand Avenue from I-70B would be eliminated with the exception of a right-in-only to Mesa Music. • Seven parking spaces would be reconstructed for businesses at Grand Central Plaza.

3.4.3 Economic Mitigation

Throughout the preparation of this EA, CDOT worked closely with business owners and tenants potentially affected by right-of-way or access changes to ensure that their concerns were understood and considered. Information about the right-of-way process and the rights of owners and tenants was provided.

Acquisition or relocation of property as a result of the Preferred Alternative will comply with the *Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970*, as amended, and other applicable relocation assistance programs (see Section 3.7, Right-of-Way).

New access will be provided for properties where existing accesses are removed by the Preferred Alternative. To avoid disruption of business activities during construction, the new access will be provided before the existing access is removed.

Good communication with emergency service providers, local businesses, and residents with regard to road delays, access, and special construction activities is recommended during the construction phase. This will be accomplished, in English and Spanish, through radio and public announcements, as well as newspaper notices, on-site signage, and the use of the City's Web site.

To minimize disruption to traffic and local businesses, construction activities will be staged and work hours varied (see Section 3.18). Throughout the construction stage, access will be preserved for each business within the study corridor.

3.5 TRANSPORTATION

3.5.1 Introduction

This section describes the existing and future transportation conditions within the I-70B West study corridor. As discussed in Chapter 1, Purpose and Need, transportation issues are central to why this project is proposed. The Purpose and Need identified four problems to be addressed: 1) congestion; 2) safety; 3) access; and 4) pedestrian, bicycle, and bus facilities. With the exception of pedestrian and bicycle facilities, these issues are addressed in this section. Pedestrian and bicycle connectivity, is addressed in Section 3.6. In addition, economic impacts as a result of access changes are addressed in the Economic section of this chapter (see Section 3.4.2).

The impacts are presented as a comparative analysis between the No Action Alternative and the Preferred Alternative. This section also discusses transportation plans reviewed, existing roadway and traffic conditions, and transit facilities. The traffic analysis includes average daily traffic volumes, peak-hour traffic volumes, and levels of service at key intersections within the study corridor.

3.5.2 Compatibility with Transportation Plans

Over the years a number of transportation planning studies and traffic studies have identified the need for transportation improvements along the I-70B corridor. These documents include the following:

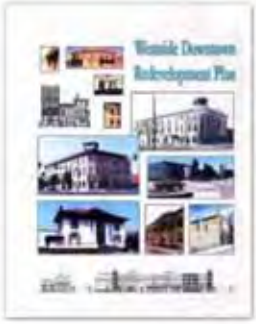
Grand Junction-Mesa County 2030 Regional Transportation Plan, 2004

This plan outlines planned improvements to the transportation network in the Grand Junction- Mesa County area. Improvements to I-70B between 24 Road and 15th Street are included as part of the 2005 - 2010 STIP/TIP. The need for these improvements is consistent with the Purpose and Need for the I-70B West EA project; to address congestion, safety, access, and pedestrian/bicycle/bus facilities.

Grand Valley Corridor Optimization Study, 2004

CDOT, Mesa County, the City of Grand Junction, and the Grand Valley Metropolitan Planning Organization (MPO) completed this study, which evaluated a variety of alternatives in the corridor area, including widening I-70B to six lanes. The alternatives with the highest (best) total score included widening all or part of I-70B to six lanes, indicating that I-70B will need additional capacity in the future.

Westside Downtown Redevelopment Plan, 2004



This study focused on the redevelopment of lower downtown and the feasibility of the Grand Junction Historic Depot site as an Intermodal Transportation Plaza. Recommendations included changes to I-70B (Ute and Piktin Avenues) through downtown. These recommendations were considered in the development of the I-70B West EA Preferred Alternative but were not carried forward as they did not address the Purpose and Need for the project. The Preferred Alternative does not preclude either the City or the Downtown Development Authority from pursuing these recommendations in the future for other reasons.

3.5.2.1 No Action Alternative

The No Action Alternative is not compatible with local transportation plans that call for improvements to address congestion, safety, and access in the I-70B West study corridor.

3.5.2.2 Preferred Alternative

The Preferred Alternative is consistent with the need and improvements identified in the local planning process. It serves the community needs of addressing congestion, safety, and access along the I-70B West study corridor.

3.5.3 Traffic Conditions

3.5.3.1 Existing Traffic Conditions

Existing traffic volumes for the study corridor were collected in October 2006. These were compared with older counts provided by both CDOT and the City of Grand Junction to confirm consistency. **Figure 3-5** shows the existing Average Daily Traffic (ADT) at various locations in the study corridor.

Existing turning movement counts for AM and PM peak hours were reviewed to determine general peak hour travel patterns. In the study corridor, PM peak hour travel patterns were found to result in the peak levels of congestion. In many cases, higher AM approach volumes occur in one or more directions, but PM volumes still result in the peak levels of congestion at the intersection. PM peak hour counts for major intersections are shown in **Figure 3-6** and **Figure 3-7**.

Figure 3-5 Existing ADT

Figure 3-6 2006 PM Peak Hour Traffic Volumes and Level of Service (LOS) — Western Portion

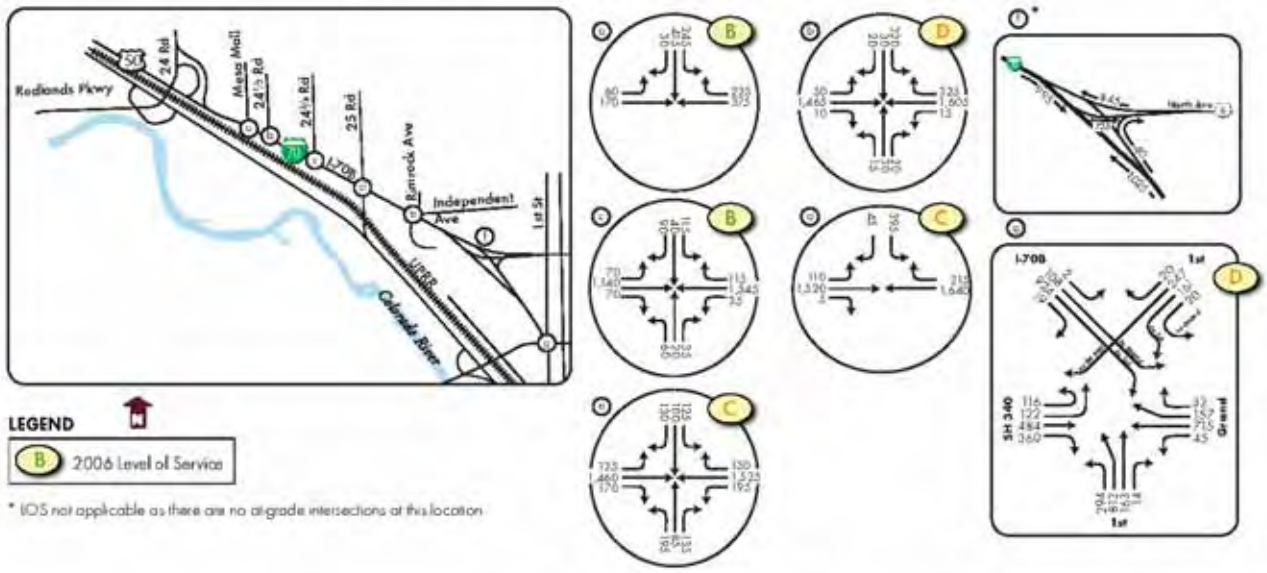
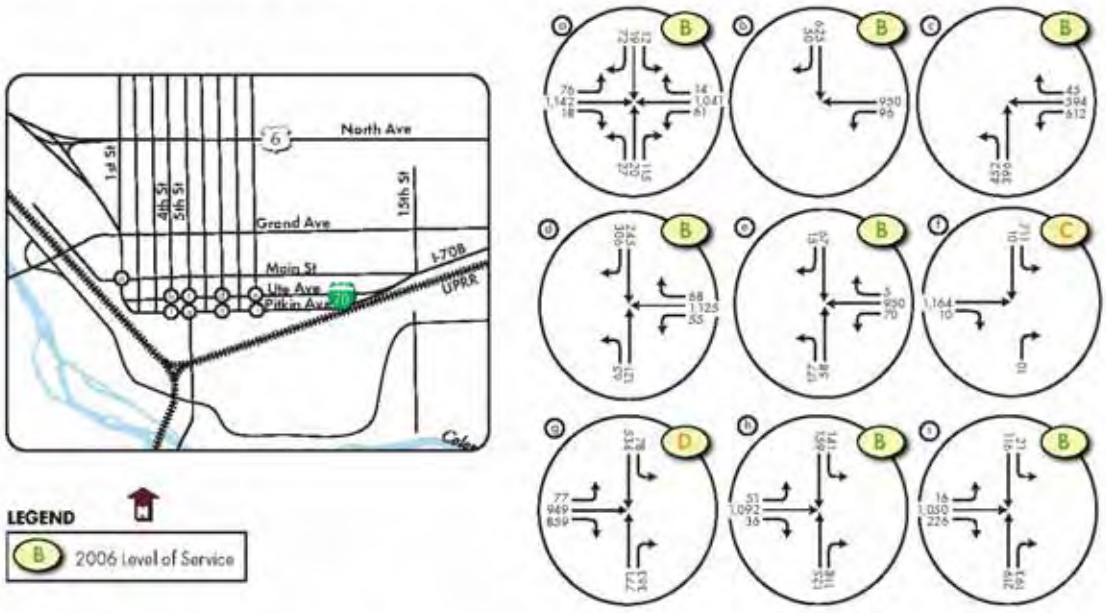


Figure 3-7 2006 PM Peak Hour Traffic Volumes and Level of Service (LOS) — Eastern Portion



Key intersections in the study corridor have been analyzed to determine level of service (LOS). These analyses were conducted in accordance with the *Highway Capacity Manual* 2000, published by the Transportation Research Board, National Research Council. In urbanized areas, most travel delay occurs at intersections and not on roadway segments. Roadways within the study corridor are consistent with this characteristic. For this reason, specific LOS at intersections are primarily used to compare alternatives and represent overall traffic operations. Additional analyses that looked at traffic coordination between intersections supplemented the individual LOS results. A graphical representation of each intersection LOS category is displayed in **Figure 1-6**, Chapter 1. Accepted traffic engineering practice dictates that intersections operating at LOS D or better are considered to be operating acceptably, while intersec-

tions operating at LOS E or F are generally in need of improvement.

The PM peak hour LOS results for the major intersections along I-70B in the study corridor are shown in **Figure 3-6** and **Figure 3-7**. The TEAPAC traffic analysis software was used for estimating LOS at study corridor intersections. This software is based on the *Highway Capacity Manual* (HCM). The results indicate that all major intersections operate at acceptable LOS during the peak PM period. It was noted during the scoping process for this EA that conditions at several intersections were considered unacceptable to many stakeholders. These intersections included the 1st Street and Grand Avenue intersection, the 5th and Pitkin intersection, and intersections near Mesa Mall during the holiday season. Many of these intersections are approaching a LOS E and may operate at LOS E occasionally.

3.5.3.2 2030 No Action Alternative Traffic Conditions

Travel forecasts for the study corridor were estimated using the Regional Transportation Planning Office (RTPO) 2030 Committed Projects TransCAD model. The 2030 base model shows I-70B with 6 through lanes. To reflect the No Action condition, the model was modified to match existing conditions along I-70B in the study corridor.

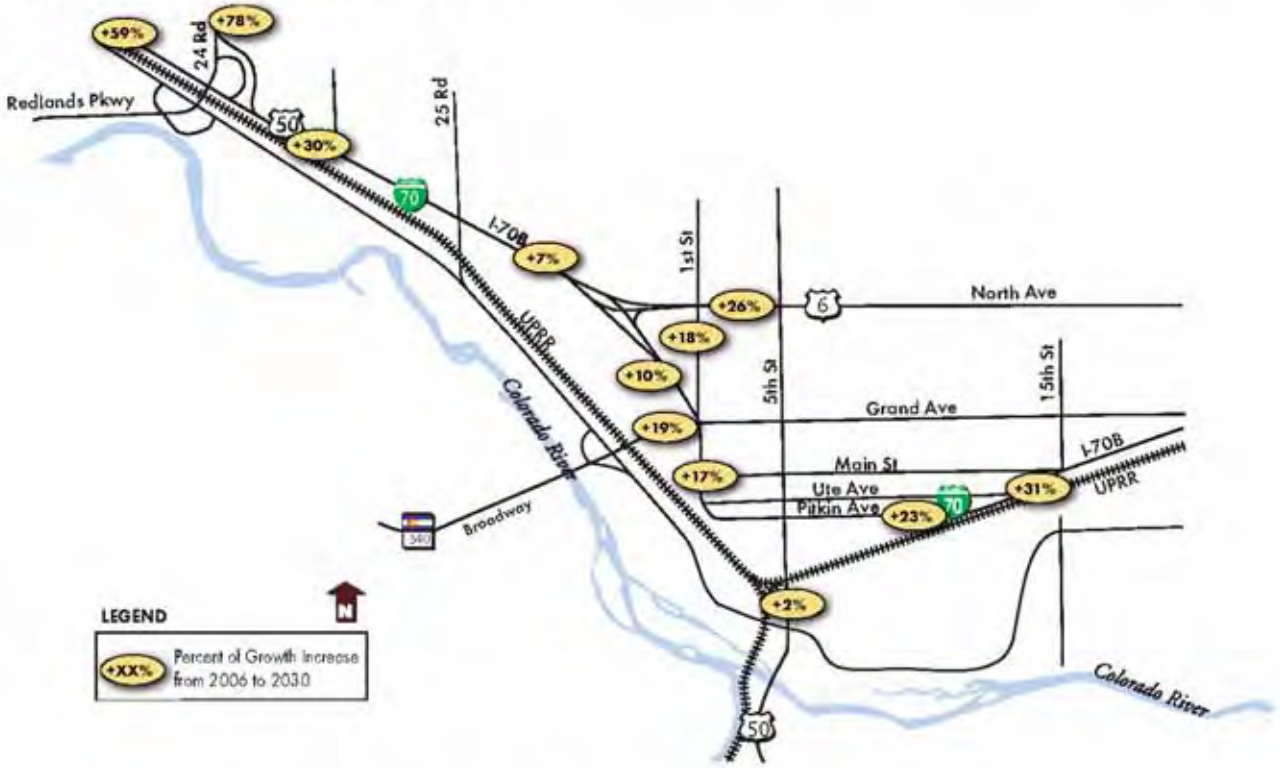
The revised model produced year 2030 ADT volumes for roadways in the study corridor with the No Action Alternative. **Figure 3-8** illustrates these volumes for key roadway segments, including I-70B in the study corridor and major cross streets.

By 2030 daily traffic volumes are expected to grow by up to 30% on I-70B within the study corridor as shown in **Figure 3-9**.

Riverside Parkway provides a bypass for through and regional traffic traveling between areas south of Grand Junction and areas west of 25 Road. Because of the new traffic expected on Riverside Parkway, the traffic growth forecasts on I-70B east of 25 Road are less than traffic growth forecasts on I-70B west of 25 Road.

Figure 3-8 2030 No Action Alternative ADT

Figure 3-9 Traffic Growth 2006 to 2030



Based on the ADT volumes produced by the model and observed turning movements, future PM peak hour turning movement volumes were estimated by applying the National Cooperative Highway Research Program (NCHRP) 255 iterative process. These volumes, as shown in **Figure 3-10** and **Figure 3-11**,were used for future year analysis.

The PM peak hour LOS results for the key intersections in the study corridor under the 2030 No Action Alternative are shown in **Figure 3-10** and **Figure 3-11**. Due to the retail zoning in the corridor, future traffic conditions are expected to be worse during the PM peak hour. This is consistent with existing conditions. Therefore, AM peak hour conditions were not analyzed.

The TEAPAC traffic analysis software was used for analyzing all study corridor intersections. The results show that four of these intersections operate at LOS E or F indicating very poor or gridlock type condition. At LOS F (gridlock) traffic delays can be extreme and highly variable.

The results indicate that the No Action Alternative does not provide acceptable traffic operations. The future LOS results show poorer traffic operations (at 7 of 15 intersections) with increased congestion and delays. The No Action Alternative does not address the congestion problem identified as part of the Purpose and Need.

3.5.3.3 2030 Preferred Alternative Traffic Conditions

Travel forecasts for the 2030 conditions with the Preferred Alternative were estimated using the RTPO 2030 Committed Projects traffic forecasting model with inclusion of the Preferred Alternative improvements.

Figure 3-12 illustrates model-projected 2030 ADT volumes on major roadways in the study corridor.

Table 3-6 shows the projected change in travel patterns between the No Action and Preferred Alternative scenarios. Because of the capacity improvements on I-70B, traffic volumes would generally increase. This is caused by latent demand where travelers choose to take the improved I-70B instead of other routes because of improved travel times and increased safety.

Figure 3-10 2030 No Action Alternative PM Peak Hour Traffic Volumes and Level of Service (LOS) — Western Portion

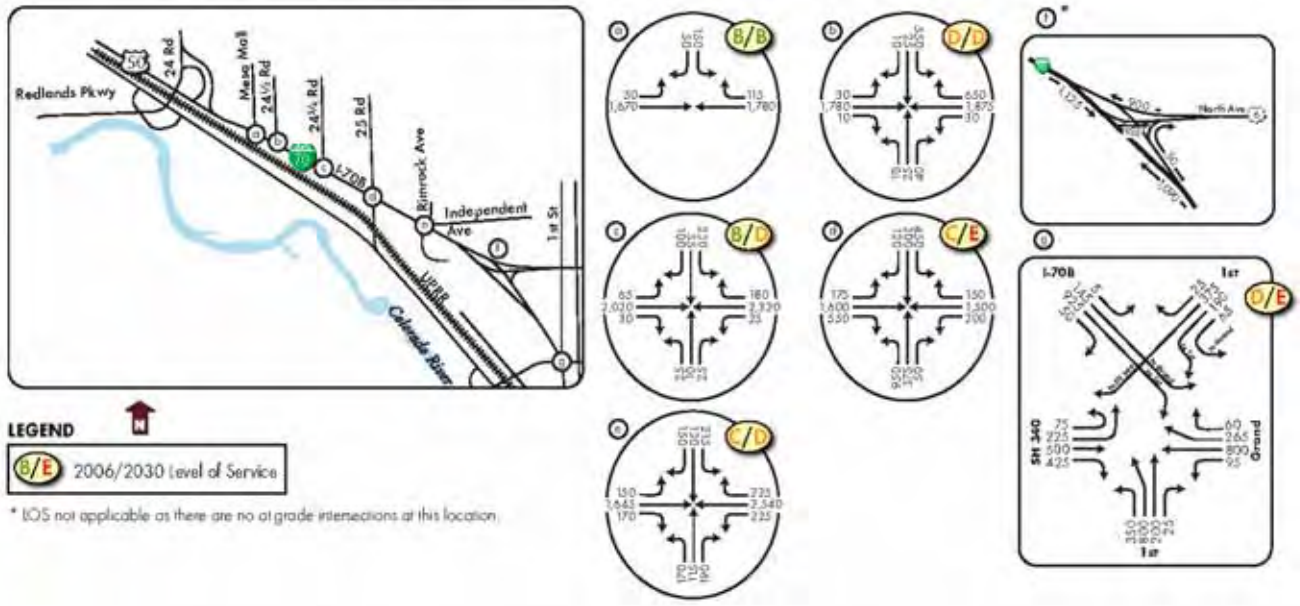


Figure 3-11 2030 No Action Alternative PM Peak Hour Traffic Volumes and Level of Service (LOS) — Eastern Portion

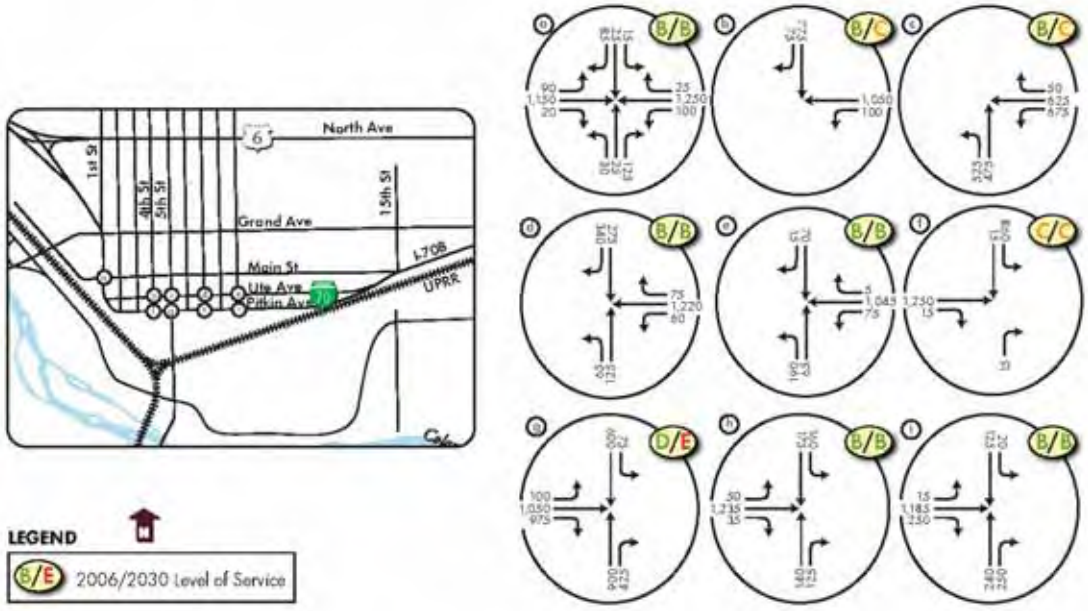


Figure 3-12 2030 Preferred Alternative ADT

Table 3-6 No Action/Preferred Alternative Projected Changes in Travel Patterns

Roadway Segment	Daily Traffic		% Change No Action to Preferred Alternative (rounded to nearest 1%)
	Year 2030 (No Action)	Year 2030 (Preferred Alternative)	
I-70B West of 24 Rd	39,200	44,600	+14%
24 Rd north of I-70B	34,300	35,200	+3%
I-70B West of 24½ Rd	37,300	47,900	+28%
River Rd west of 25 Rd	13,500	11,700	-13%
Riverside Pkwy east of River Rd	36,000	36,700	+2%
I-70B east of 25 Road	51,400	61,600	+20%
North Ave between 1st and 5th Streets	27,600	27,000	-2%
I-70B south of North Ave	31,700	40,800	+29%
1st St north of Grand Ave	13,000	12,500	-4%
SH 340 west of I-70B (1st St)	27,600	27,200	-1%
Grand Ave east of I-70B (1st St)	20,800	19,600	-6%
5th St south of I-70B (Pitkin & Ute Avenues)	28,600	29,300	+2%
I-70B (Pitkin & Ute Avenues) east of 5th St	33,200	35,000	+5%
I-70B (Pitkin & Ute Avenues) west of 15th St	33,000	35,600	+8%

Future PM peak hour turning movement volumes were estimated by applying the NCHRP 255 iterative process, based on the ADT volumes produced by the model and observed turning movements. These volumes, as shown in **Figure 3-13** and **Figure 3-14**, were used for future year Preferred Alternative analysis.

As with the existing and 2030 No Action Alternative, the PM peak hour LOS results were analyzed because the PM peak period represents the time period of heaviest congestion. The TEAPAC traffic analysis software was used for analyzing all study corridor intersections. **Figure 3-13** and **Figure 3-14** shows the results of the Preferred Alternative PM peak hour LOS analysis compound with the 2030 No Action Alternative LOS analysis. The results indicate that intersections in the transportation study corridor operate at acceptable levels of service during the peak hour in 2030.

Figure 3-13 2030 Preferred Alternative PM Peak Hour Traffic Volumes and Level of Service (LOS) — Western Portion

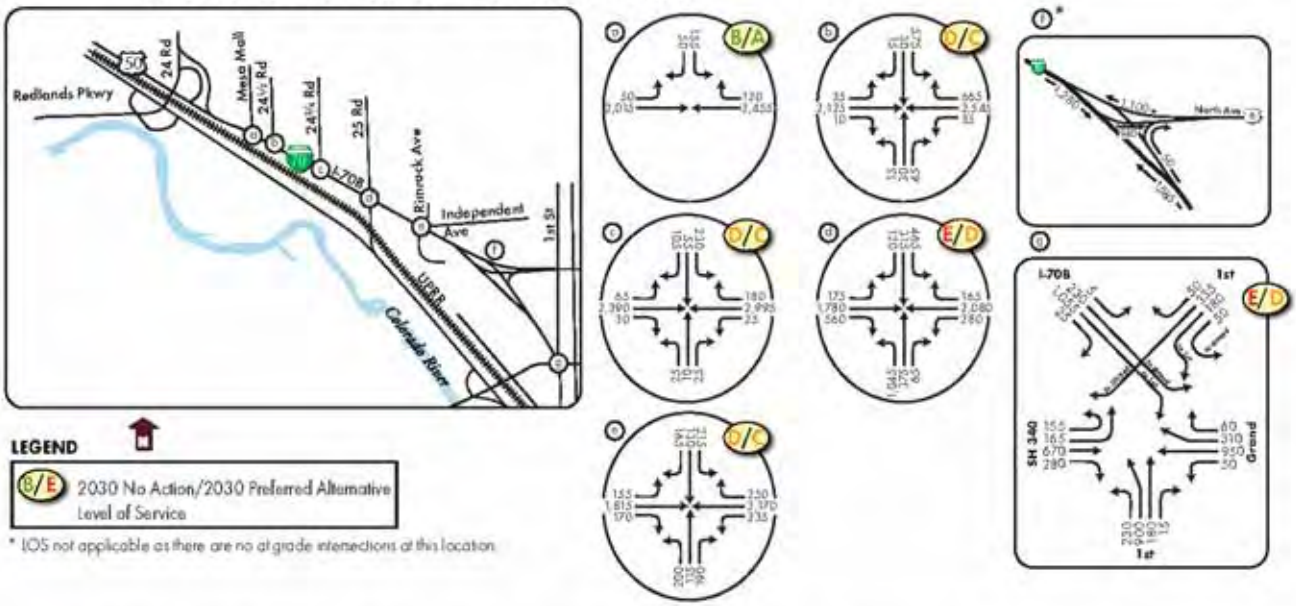
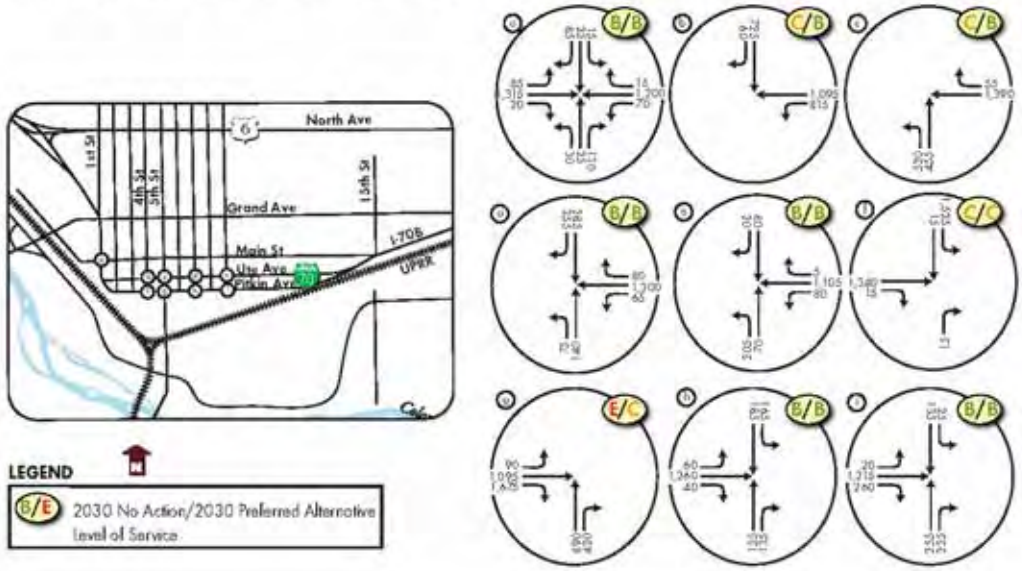


Figure 3-14 2030 Preferred Alternative PM Peak Hour Traffic Volumes and Level of Service (LOS) — Western Portion



In addition to the LOS analysis conducted for the intersections, additional progression analyses were conducted in three areas to confirm that queue backups from intersections would not negatively affect adjacent intersections. The three areas where the progression analysis was conducted included:

1. **I-70B from the signalized Mesa Mall access west of 24 ½ Road to Independent Avenue.** Results of the progression analysis showed that intersection queue backups would not negatively affect adjacent intersections.
2. **The 1st Street and Grand Avenue intersection area.** Results of the progression analysis showed that intersection queue backups would not negatively affect adjacent intersections.
3. **The intersections of 4th and 5th Streets with Pitkin and Ute Avenues.** Since these intersections all operate in a one-way movement, they must all be coordinated with each other and with progression of traffic on both Ute Avenue and Pitkin Avenue. Progression for both cases was checked. Results showed that intersection queue backups would not negatively affect adjacent intersections.

3.5.3.4 Traffic and Level of Service Impacts

No Action Alternative

The No Action Alternative results in increased congestion for almost all of the major intersections in the study corridor. In some cases, the increased congestion results in LOS in the unacceptable range (LOS E or F). The No Action Alternative does not reduce congestion or efficiently accommodate future traffic volumes. The No Action Alternative, therefore, does not meet the project Purpose and Need.

Preferred Alternative

The Preferred Alternative would result in acceptable traffic operations for all intersections evaluated in the study corridor. This has been confirmed for both individual intersection LOS and progression effects between intersections. Because of capacity increases on I-70B as part of the Preferred Alternative, traffic volumes would increase. This additional traffic is anticipated to reduce traffic on other competing and congested routes, further reducing congestion. Because of the improvements in traffic operations the Preferred Alternative would best address the congestion element of the project Purpose and Need.

3.5.4 Traffic Safety Analysis

Accident data provided by CDOT and the City of Grand Junction were evaluated using the most recent data available (2003-2006). In addition, CDOT's Safety and Traffic Engineering Section developed a safety report on I-70B within the study corridor.

3.5.4.1 Accident History

The accident history along I-70B was examined to locate accident clusters and identify accident causes. Six hundred and ninety one (691) accidents were reported in the three-year period and included one fatality.

Section 1.5 illustrates the breakdown of accidents along I-70B by accident severity. As shown, 25% of the accidents resulted in injuries. Also shown are the accident types within the study corridor. The most prevalent accident type is rear-end representing about half the total number. The number of rear-end accidents is slightly higher than expected for this type of facility. Rear-end accidents are typically associated with higher levels of congestion and numerous access points.

Weighted Hazard Index

CDOT reports accident information through a weighted hazard index (WHI). The WHI is the rating that CDOT assigns roadway facilities when measuring traffic safety factors. The index compares similar facilities and rates the facility's comparative traffic safety. If the WHI is below zero on a particular facility, it shows that the particular facility is safer than an average facility of similar type. If the WHI is above zero, it shows that the particular facility is less safe than an average facility of similar type. The WHIs associated with the transportation study corridor are summarized in **Table 3-7**.

Table 3-7 Weighted Hazard Index

Period	Weighted Hazard Index (WHI)	Traffic Safety Compared to Similar Facilities
2001	3.15	Worse
2002	5.40	Worse
2003	4.96	Worse
Average	4.50	Worse

Accident Rates

Accident rates are also used to measure the safety of a roadway. Accident rates are expressed in terms of accidents per million vehicle miles of travel (MVM) and are compared to average statewide rates for other similar roadways. **Table 3-8** summarizes accident rates by year for the I-70B West study corridor. **Table 3-9** summarizes accident rates by segment for the same three-year period.

North Avenue to I-70B Weaving

During project scoping, concern was raised about the safety of weaving along I-70B from westbound North Avenue to southbound Rimrock Avenue. An analysis was conducted on this segment looking at sideswipe accidents, the best indicator of weaving-related accidents. In this area, sideswipe accident rates are slightly higher than in other segments. For all of the sideswipes on I-70B between North Avenue and Rimrock Avenue, an examination of the specific location was conducted. The results are shown in **Table 3-10** and indicate sideswipe accidents are most likely to occur close to the intersection of Rimrock and I-70B. Accidents are not occurring near the merge point with North Avenue as often as the intersection with Rimrock Avenue.

Table 3-8 Accident Rates by Year

Period	Accident Rate Data (accident/MVM)			
	Property Damage Only	Injury	Fatal	Total
2001	4.51	1.30	0.03	5.84
2002	4.37	1.87	0.00	6.24
2003	4.56	1.72	0.00	6.28
Average	4.48	1.64	0.01	6.12
2002 Average Statewide Rate for Other Federal Aid Primary Urban Highways	2.61	0.97	0.01	3.59
% Change from Statewide Average Rate	71% higher	69% higher	Same	70% higher

Table 3-9 Accident Rates by Segment

Segment	Overall 3-year accident rate (accident/MVM)	% change from statewide average
24 Road to North Avenue	5.47	10% higher
North Avenue to One-Way Couplet (Pitkin and Ute Avenues)	8.41	68% higher
Pitkin and Ute Avenues (1st Street to 15th Street)	7.54	50% higher

Table 3-10 Sideswipe Accidents for I-70B between North Avenue and Rimrock Avenue (Westbound)

Road Description	Total Accidents (3 years)
At North Avenue Interchange	1
Between North Avenue and Rimrock Avenue	3
Approaching Rimrock Avenue	3
At Rimrock Avenue	3
Total	**10**

3.5.4.2 Traffic Safety Impacts

No Action Alternative

As projected traffic volumes increase, it is likely that the number of accidents along I-70B will increase. It is also likely the accident rate will increase due to the increased potential for vehicle conflict and higher levels of congestion. The No Action Alternative does not meet the safety element of the Purpose and Need.

Preferred Alternative

The Preferred Alternative would improve traffic safety by reducing conflict points and lowering congestion along the I-70B corridor.

The Preferred Alternative would improve traffic safety by reducing conflict points and lowering congestion along the I-70B corridor. For the section between 24 Road and North Avenue, improved access control would reduce the number of accesses and provide better control at the resulting access points. At the North Avenue interchange, the weaving from westbound North Avenue to southbound Rimrock Avenue would be improved by increasing the length of the weave. Along the 1st Street portion of I-70B, the additional through lane would reduce the direct conflict between through traffic and turning traffic. At the 1st Street and White Avenue intersection the new ¾ access would reduce the number of conflict points. At the 4th Street, 5th Street, Pitkin Avenue, and Ute Avenue intersection area, the revised traffic pattern caused by the one-way movements would improve traffic safety by reducing the number of conflict points and reducing overall congestion. The Preferred Alternative best meets the safety element of the Purpose and Need.

3.5.5 Access

Access to and from I-70B varies depending upon the location in the corridor. Changes in access are discussed below. Economic impacts due to access changes are discussed in Section 3.4.2.

3.5.5.1 Existing Conditions

For the section between 24 Road and North Avenue, access is generally provided via signalized intersections at major cross streets, unsignalized intersections between the major cross streets, and a two-way frontage road system with various connections to the signalized and unsignalized intersections. Access is generally direct between the frontage road to I-70B and provides access in all directions. However, existing access can require long waits during congested periods. Safety is also a concern at unsignalized intersections because of the high potential for conflict. Field observations and traffic counts confirm that the majority of traffic currently accesses businesses in the area via signalized intersections.

For the North Avenue area, access is limited to right-in/right-out movements. This requires some out-of-direction travel because traffic cannot turn left out of businesses or left into businesses.

Along 1st Street, access is provided at major cross streets for all turns and between cross streets for right-in/right-out turns.

Along the Ute Avenue and Pitkin Avenue one-way couplet, all access to and from I-70B is directional based on the one-way street system. Access is provided by side streets and right-in/right-out access points.

3.5.5.2 Access Impacts

No Action Alternative

As traffic volumes increase, access will become more difficult at all locations. Delays at signalized intersections will increase and in some cases will be in gridlock during peak hours. Access at unsignalized intersections between 24 Road and North Avenue will become much more difficult as queue backups from signalized intersections block movements. When queues are not present, increased traffic volumes will reduce the available gaps in traffic and increase the potential for conflicts.

Access at other locations within the study corridor will also become more difficult as traffic volumes increase. Because there will be fewer and shorter gaps in traffic for access to occur, drivers will more likely take greater risks and will experience greater delays.

Access needs are not addressed in the No Action Alternative and therefore this alternative does not meet Purpose and Need.

Preferred Alternative

For the section between 24 Road and North Avenue, the Preferred Alternative would provide greatly improved access control. By providing a median along I-70B in

this section, unsafe uncontrolled left-turn movements onto I-70B would be eliminated. By providing ¾ access points between major signalized intersections, businesses would be provided relatively frequent ingress points. By limiting the number of access points between signalized intersections, access maneuvers that slow down traffic and increase the potential for accidents would be minimized. And finally, by adding additional capacity along I-70B, congestion at all access points, including signalized intersections, would be reduced, providing more signalized green time for side roads and more gaps in traffic for ¾ movements.

For the North Avenue area, access to existing businesses would be enhanced by providing a ¾ turn from northwest-bound I-70B at the future Teller Avenue. This movement is not currently provided. The existing U-turn access from westbound I-70B to eastbound I-70B west of the North Avenue connection would be replaced by the new ¾ movement turn at Teller Avenue and the option of a U-turn at Rimrock Avenue.

Along the 1st Street section of I-70B, access would be enhanced by the addition of the third travel lane in each direction. This increased capacity would reduce the potential conflict between turning traffic and through traffic and would result in additional gaps in traffic. Further, the additional capacity would provide increased green time at side streets compared to the No Action Alternative.

Along the Pitkin Avenue and Ute Avenue one-way couplet, there would be no direct access changes. The ability to access properties would be slightly enhanced because of the reduction in congestion and the resulting reduction in queue backups on both streets.

The Preferred Alternative best meets the access element of the project's Purpose and Need.

3.5.5.3 Access Management Guidelines

It was recognized during the EA process that development along I-70B may change over time. As this development changes, access that works best for existing and committed land uses may not be the best for future development. Because there are no committed plans for this future development, this EA does not include it as part of the Preferred Alternative. However, a separate standalone document titled *I-70B West Access Management Guidelines* was prepared to provide guidance on how access should be addressed if redevelopment occurs. These guidelines were developed to be consistent with the Preferred Alternative and to provide safe and effective access as redevelopment occurs. When and if a redevelopment occurs, both CDOT and the City of Grand Junction would use these guidelines to address how access should be accommodated.

3.5.6 Transit

Mesa County residents currently benefit from a variety of private and public transportation services. Grand Valley Transit (GVT) provides the majority of general public transit services in Mesa County. This service is provided under contract by MesAbility, Inc. GVT operates Monday through Saturday, except during seven nationally recognized holidays. Buses run on weekdays every hour beginning at 5:15 a.m. and operate until 7:15 p.m. and from 8:15 a.m. to 6:15 p.m. on Saturdays. There are currently 11 fixed routes serving Grand Junction, Fruita, and Palisade, all equipped with wheelchair lifts and bike racks.

3.5.6.1 Fixed Route Service

GVT operates a system with 11 color-coded fixed routes within the Grand Junction area. The fixed routes are $1.00 per ride with free transfers at any of the three transfer centers. Routes are scheduled to meet at the same time for convenient transfers. Transfers can also be made at any of the fixed-route bus stops. The three transfer stations are located at the following sites:

- 7th Street and South Avenue (south)
- Coronado Plaza (east)
- Mesa Mall (west)

Of the 11 fixed routes, 7 pass through the I-70B West study corridor.

- **Route 1 Airport** - services a portion of Ute and Pitkin Avenues between 7th Street and 4th Street and provides service between the 7th Street and South Avenue Transfer Station and the Airport.
- **Route 3 Orchard Avenue** - services a portion of Ute and Pitkin Avenues between 7th Street and 12th Street and provides services between the 7th Street and South Avenue Station and Orchard Avenue.
- **Route 5 Downtown** - crosses I-70B at Grand Avenue and 9th Street while serving the downtown area.

- **Route 6 Orchard Mesa** - provides service between the 7th Street and South Transfer Station and Orchard Mesa.
- **Route 7 Mesa Mall** - services a portion of I-70B between Mesa Mall and 25 Road and areas to the northeast.
- **Route 8 Fruita** - services a portion of I-70B west of Mesa Mall and connects to Fruita.
- **Route 11 Shopping Malls** - connects Mesa Mall with Rimrock Marketplace and the Redlands area.

3.5.6.2 Ridership

GVT has undergone numerous service changes since service was begun in 2000, as ridership has increased. **Table 3-11** shows the fixed-route ridership trends from January 2002 through 2006.

Table 3-11 Grand Valley Transit Ridership History

Calendar Year	Fixed Route Service		
	Ridership	% Change	Cumulative % Change
2002	573,900	---	---
2003	693,300	+21%	+21%
2004	675,000	-3%	+18%
2005	553,100	-18%	-4%
2006	759,200	+37%	+32%

3.5.6.3 Future Service Plan

The Transit Element of the Mesa County Transportation Plan identifies funded transit improvements for GVT. These improvements include operating an additional paratransit van in the outlying areas of Fruita and Palisade in addition to revising route 5 to serve new developments in Grand Junction.

3.5.6.4 Transit Impacts

No Action Alternative

There are no anticipated changes to transit routes as a result of the No Action Alternative. However, travel times for buses using or crossing I-70B are expected to increase as congestion gets worse.

Preferred Alternative

There are no anticipated changes to transit routes as a result of the Preferred Alternative. However, travel times and overall safety for buses using or crossing I-70B are expected to improve when compared to the No Action Alternative. Also the only existing bus stop on I-70B would be improved with the Preferred Alternative, with concrete bus pads and shelters.

3.6 PEDESTRIAN AND BICYCLE FACILITIES

3.6.1 Existing Conditions

According to the City of Grand Junction Existing Urban Trails Map, February 2002, the core of Grand Junction's urban trail system is immediately northeast of the study corridor. Trails located immediately south of the study corridor consist of both urban trails and nature trails, and include trail systems along the Colorado River.

No trails are located along I-70B in the study corridor. However, trails cross I-70B at the seven locations described in **Table 3-12** and shown in **Figure 3-15**.

Pedestrian facilities along I-70B are sparse and discontinuous, with only a few sidewalks located in the western part of the study corridor, between 24 Road and 1st Street. Sidewalks are more prevalent in the eastern part of the study corridor, between 1st Street and 15th Street. Sidewalk locations are as follows:

- Sidewalk on both sides of 24 ½ Road where it intersects I-70B.
- Five short segments of sidewalk along the south side of I-70B between 24½ Road and 25 Road. A short sidewalk along the north side of I-70B between Bogart Lane and Rimrock Avenue.
- Off-street sidewalk along the south side of I-70B between Bogart Lane and Rimrock Avenue, and between Rimrock Avenue and 25 ½ Road.
- Sidewalks at the northeast and southwest corners of the I-70B and 1st Street intersection.
- Sidewalks along both sides of I-70B between Grand Avenue and Ute Avenue.
- Sidewalks along both sides of Ute Avenue and Pitkin Avenue between 2nd Street and 15th Street.

Five GVT bus stops are located along I-70B in the study corridor.

Existing bicycle/pedestrian facilities and GVT bus stops in the study corridor are shown on **Figure 3-15**.

Table 3-12 Trail Crossings

Map ID #	I-70B Crossing Location/Trail Description
1	24 Road (on bridge) bike lane (signed and striped).
2	25 Road (signalized intersection) bike lane (signed and striped).
3	Independent Avenue (signalized intersection) bike route (signed only).
4	Off-street bike/pedestrian facility that starts at I-70B and Grand Avenue and follows Grand Avenue/ Broadway Road to the southwest.
5	Main Street (signalized intersection): West of I-70B the trail is designated as a bike lane (signed and striped); east of I-70B it is designated as a bike route (signed only).
6	3rd Street bike lane (signed and striped).
7	7th Street (signalized intersection) bike route (signed only) and off-street bike/pedestrian facility.

Source: City of Grand Junction Existing Urban Trails Map, February 4, 2002.
Note: Map ID # corresponds to ***Figure 3-15****.*

Figure 3-15 Existing Bicycle/Pedestrian Facilities

Source: City of Grand Junction, Existing Urban Trails Map, February 4, 2002.

3.6.1.1 Planned Facilities

There are two planning documents that identify pedestrian and bicycle accommodations in the Grand Valley. The *Multi-Modal Transportation Plan*, 1993, amended in 2002, is a 20-year plan for the improvement of the pedestrian, bicycle, and intermodal transportation network in the Mesa County/Grand Junction metropolitan area. The City of Grand Junction *Parks and Recreation Master Plan*, 1992 and 2001, identifies the development of pedestrian and bicycle facilities as a high priority. The plan indicates that there is strong support from the community for expanding the existing trails system throughout Grand Junction.

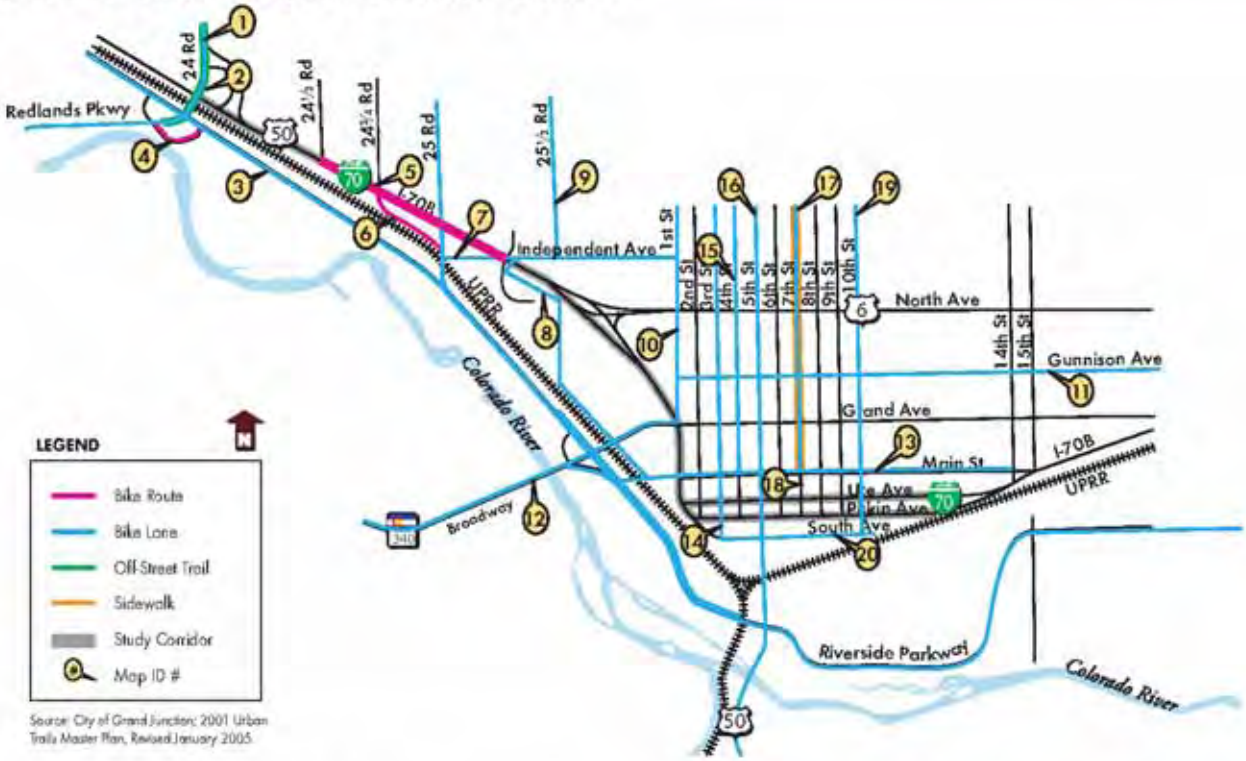
According to the 2001 Urban Trails Master Plan map, numerous bicycle and pedestrian facilities are planned in Grand Junction. Planned facilities located within the study corridor are listed in **Table 3-13** and shown on **Figure 3-16**.

Table 3-13 Planned Bicycle and Pedestrian Facilities

Map ID #	Trail Description
1	Off-street trail along both sides of 24 Road starting at I-70 to the north and terminating at I-70B to the south.
2	Bike lane along 24 Road starting at I Road to the north and heading south where 24 Road becomes Redlands Parkway and South Broadway to the southwest.
3	Bike lane along River Road, starting several miles west of 24 Road and terminating at 5th Street to the southeast.
4	Bike route on southeast section of the ramp at Redlands Parkway/24 Road.
5	Bike route along both sides of I-70B starting at 24 ½ Road on the west and terminating at Rimrock Avenue/Independent Avenue on the east.
6	Bike route along 24 ¾ Road starting at I-70B, heading southeast along West Independent Avenue, and terminating at intersection of West Independent Avenue and 25 Road.
7	Bike lane along 25 Road starting at I Road to the north, crossing I-70B, following east along Independent Avenue, crossing I-70B again, and terminating at 26 Road/1st Street.
8	Bike lane starting at intersection of I-70B and Rimrock Avenue, following southeast near Rimrock Avenue, then following 25 ½ Road alignment south where it becomes Crosby Avenue to its terminus at Main Street.
9	Bike lane along 25 ½ Road starting at G Road to the north and terminating at Independent Avenue to the south.
10	Bike lane along 26 Road/1st Street starting at I Road to the north and terminating at Grand Avenue/I-70B to the south.
11	Bike lane along Gunnison Avenue starting at 26 Road/1st Street to the west, and terminating at 28 Road to the east.
12	Bike lane along West Grand Avenue, starting at I-70B to the east and following along West Grand Avenue/South Broadway to the southwest and northwest.
13	Bike lane along Main Street, starting at Broadway/Grand Avenue to the west and terminating at 14th Street to the east.
14	Bike lane along 3rd Street starting at Sherwood Park to the north and terminating at South Avenue to the south.
15	Bike lane along 4th Street starting at East North Avenue to the north and terminating at Main Street to the south.
16	Bike lane along 5th Street starting at Orchard Avenue to the north and continuing south along SH 50 to the southeast.
17	Sidewalks along both sides of 7th Street starting at Orchard Avenue to the north and terminating at Main Street to the south.
18	Bike lane along 7th Street starting at Main Street to the north and terminating at C ½ Road to the south.
19	Bike lane along 10th Street starting at E Road to the north and terminating at South Avenue to the south.
20	Bike lane along South Avenue starting at 3rd Street to the west and terminating at 10th Street to the east.

Note: According to the City of Grand Junction (Project Working Group input), the off-street trail shown between the Mesa Mall west signal and 24 ½ Road in the 2001 Urban Trails Master Plan (revised January 2005) is not planned and is therefore not included in this list.
Source: 2001 Urban Trails Master Plan map, revised January 2005.

Figure 3-16 Planned Bicycle/Pedestrian Facilities



3.6.2 Pedestrian and Bicycle Facility Impacts

3.6.2.1 No Action Alternative

The No Action Alternative would provide the planned facilities in the study corridor listed in **Table 3-13**. However, it would not improve the current discontinuous nature of sidewalks along I-70B. Also, as traffic in the study corridor increases, conditions for pedestrians and bicyclists would deteriorate.

3.6.2.2 Preferred Alternative

Construction of the Preferred Alternative would provide improved pedestrian facilities in the study corridor, improve the discontinuous nature of the existing facilities, and accommodate planned bicycle facilities. Improvements to bicycle and pedestrian facilities as a result of the Preferred Alternative are as follows:

- Is consistent with the planned bicycle and pedestrian facilities included in the 2001 Urban Trails Master Plan, revised January 2005 (listed in **Table 3-13**).
- Extends the off-street sidewalk located on the south side of I-70B between Bogart Lane and Rimrock Avenue approximately 250 feet to the west.
- Provides sidewalks on both sides of I-70B, except at the locations noted below. Sidewalks would be 8 feet wide from the Mesa Mall area to the 1st Street and Grand Avenue intersection; from that intersection east, the sidewalk would narrow to 5 feet wide.
  - No sidewalk on the south side of I-70B west of the signalized Mesa Mall access.
  - No sidewalk on the west side of 1st Street between Main and 2nd Streets.
  - No improvements to existing sidewalks between 2nd and 3rd Streets.
  - No improvements to existing sidewalks between 6th Street and project terminus at 15th Street.
- Replaces impacted sidewalks between 3rd Street and 6th Street.
- Provides pedestrian crossings at I-70B intersections and at frontage road intersections, except at the west entrance to Mesa Mall.
- Provides mid-block pedestrian crossing between 1st Street and 2nd Street where 1st Street curves east and becomes Pitkin Avenue.

- Requires temporary closure and detouring of sidewalks and trails during construction.

3.6.3 Pedestrian and Bicycle Facility Mitigation

There would be no adverse impacts associated with the Preferred Alternative; therefore, no mitigation measures are necessary. During construction, fencing will be provided to protect pedestrians and bicyclists from construction areas, and signage will be used to direct sidewalk and trail users to detour routes.

The Preferred Alternative provides needed pedestrian and bicycle connectivity and upgrades safety for bicyclists and pedestrians in the study corridor.

3.7 RIGHT-OF-WAY

3.7.1 Existing Conditions

Existing right-of-way was analyzed using current parcel mapping obtained from Mesa County and March 2007 construction limits for the Preferred Alternative. The right-of-way varies greatly in the study corridor depending on the street. This right-of-way provides access to a mixture of land uses, primarily industrial and commercial land uses along the western portion of the study corridor, with increasing amounts of residential uses further east within the study corridor. On the eastern side of the study corridor through downtown Grand Junction, right-of-way for streets varies from 80 feet to a maximum of 100 feet across at Grand Avenue. Right-of-way for alleys in this area is 20 feet. On the west side of the study corridor, the existing I-70B right-of-way is typically 160 feet across and can vary to as much as 400 feet at intersections. Right-of-way for I-70B cross roads is typically 80 feet across. The right-of-way for the I-70B and North Avenue interchange area is the largest in the study corridor and is as much as 1,000 feet across. The approximate widths of the right-of-way for the principle roads in the study corridor are shown in **Table 3-14**.

3.7.2 Right-of-Way Impacts

3.7.2.1 No Action Alternative

The No Action Alternative would not require any new right-of-way, property acquisitions, or business and residential relocations in the I-70B West study corridor.

Table 3-14 Right-of-Way Widths

Road/Street	Location	Approximate Width
I-70B	West of Downtown (i.e., 24 Road to North Avenue Interchange)	Varies 160 to 400 feet
	Along 1st Street Section	100 feet
North-South Downtown Street Grid	Surface Roads (numbered streets)	80 feet
East-West Street Grid	Surface Roads (i.e., Ute and Pitkin)	80 feet
	Grand Avenue	100 feet
	Alleys	20 feet

3.7.2.2 Preferred Alternative

The Preferred Alternative would require the acquisition of approximately 2.5 acres of new right-of-way from 40 parcels (see **Table 3-15**). Of the 40 total parcels impacted, only 9 would require more than 0.1 acre of acquisition and many would be less than 0.01 acre. No residential parcels would be affected. Slivers of land from one park (less than 100 square feet at Whitman Park) would be required. There would be no displacement of residents, neighborhoods, public facilities, non-profit organizations, or families having special composition.

On the west side of the I-70B West study corridor, partial land acquisitions would be required primarily to accommodate access locations. Most of the improvements to the I-70B roadway would fit within the existing right-of-way. From the 1st Street and Grand Avenue intersection to where it becomes one-way couplets at Ute and Pitkin Avenues, roadway construction limits would slightly exceed the existing right-of-way, and slivers of commercial parcels would be required along portions of I-70B on both sides of the roadway. As I-70B curves from north-south on 1st Street to east-west at Ute and Pitkin Avenues, slivers of commercial parcels are needed to accommodate the improved roadway curvature. On the east side of the study corridor along Ute and Pitkin Avenues from 2nd Street to 6th Street, the proposed improvements would mostly fit into the existing right-of-way. At 4th and 5th Streets, additional right-of-way slivers of parcels would be required to accommodate the improved intersections. East of 6th Street, there would be no additional right-of-way required.

Acquisition of right-of-way from existing businesses would include mostly slivers of land, and only one business relocation would be required (Watermark Spas). One other business would have a partial impact to an existing structure (Mesa Pawn) but this would not result in a business relocation. Right-of-way impacts to 29 of the impacted businesses would primarily be in the form of loss of unused or vacant land adjacent to the roadways. Eight businesses would loose some existing parking spaces. One business would temporarily lose some parking spaces during construction. See Section 3.4.2, Economic Impacts, for additional impacts to businesses.

Table 3-15 Estimates of Right-of-Way Acquisitions

Property Location	Business Name	Primary Use	Acres to be Acquired	Type of Impact
2449 Hwy 6/50	Office Depot	Commercial	0.31	10 parking spaces (10% of total)
2455 Hwy 6/50	Circuit City	Commercial	0.01	Median/vacant/unused
2454 Hwy 6/50	Valley Plaza (Multiple Businesses)	Commercial	0.14	6 parking spaces (~3% of total)
2456 ½ Hwy 6/50	Mikes Fiberglass Boat Repair	Commercial	<0.01	Median/vacant/unused
Unknown	Vacant Lot	Commercial	0.16	Median/vacant/unused
2460 Hwy 6/50	Shiners Car Wash and Lube Center	Commercial	0.07	11 parking spaces (~20% of total)
2462 Hwy 6/50	Big O Tire	Commercial	0.01	Median/vacant/unused
2469 Hwy 6/50	Rex Audio/Visual	Commercial	<0.01	Median/vacant/unused
2475 Hwy 6/50	Golden Villa Homes	Commercial	0.02	2 parking spaces (~20% of total)
2485 Hwy 6/50	Ace Home	Commercial	0.05	Median/vacant/unused
2490 Hwy 6/50	Marine Max	Commercial	0.06	8 parking spaces (~24% of total)
2494 Hwy 6/50	Holman House	Commercial	0.11	Median/vacant/unused
Unknown	Manufactured Homes	Commercial	0.06	Median/vacant/unused
2491 Hwy 6/50	Watermark Spas	Commercial	0.36	Entire property - relocation required
Unknown	Cottonwood Mall Multiple Businesses	Commercial	<0.01	Median/vacant/unused
Unknown	Vacant Lot	Commercial	<0.01	Median/vacant/unused
2497 Hwy 6/50	Guerdon Village (Stay on Quality Homes)	Commercial	0.04	Median/vacant/unused
2510 Hwy 6/50	Office	Commercial	0.13	Median/vacant/unused
2507 Hwy 6/50	Palm Harbor Homes	Commercial	0.10	Manufactured homes to move on-site
2522 Hwy 6/50	Pine Country Truck and Trailer Sales	Commercial	0.08	4 parking spaces (~8% of total)
Unknown	Empty Land with Billboard	Commercial	0.21	Median/vacant/unused
2571 Hwy 6 & 50	Abbey Carpet	Commercial	0.03	Median/vacant/unused
2573 Hwy 6/50	Vacant Lot	Commercial	0.05	Median/vacant/unused
517 N 1st St	Quizno's	Commercial	<0.01	Median/vacant/unused
400 N 1st St	Rite Aid	Commercial	0.08	Median/vacant/unused
104 White Ave	Value Lodge	Commercial	<0.01	Median/vacant/unused
200 Rood Ave	City Market	Commercial	<0.01	Median/vacant/unused

Table 3-15 Estimates of Right-of-Way Acquisitions (Continued)

Property Location	Business Name	Primary Use	Acres to be Acquired	Type of Impact
200 W Grand Ave	Grand Central Plaza (Various Retail)	Commercial	0.04	7 parking spaces (~7% of total)
105 Grand Ave	Conoco	Commercial	0.02	Median/vacant/unused
333 N 1st St	Conoco/Eagle Convenience Store	Commercial	0.08	Edge of pump island
233 N 1st St	Burger King	Commercial	<0.01	Median/vacant/unused
213 N 1st St	Vacant Lot	Commercial	<0.01	Median/vacant/unused
125 N 1st St	Two Rivers Inn	Commercial	<0.01	Median/vacant/unused
103 N 1st St	Retail	Commercial	<0.01	Median/vacant/unused
100 Main St	World Savings Bank	Commercial	<0.01	Median/vacant/unused
225 S 2nd St	Mesa Pawn	Commercial	0.06	Edge of building and 6 parking spaces (~35% of total)
459 Pitkin Ave	Convenience Store and Gas Station	Commercial	<0.01	Median/vacant/unused
406 S 5th St	Enterprise Car Rental	Commercial	<0.01	Temporary 15 parking spaces (~43% of total)
336 S 5th St	Clairs Auto Service	Commercial	<0.01	Median/vacant/unused
Whitman Park	Whitman Park	Park	<0.01	Median/vacant/unused
Total			2.48	

3.7.3 Right-of-Way Mitigation

For any person(s) whose real property interests may be impacted by this project, the acquisition of those property interests will comply fully with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, (Uniform Act)*. The Uniform Act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from Federal or federally assisted programs or projects. It was created to provide for and insure the fair and equitable treatment of all such persons. To further ensure that the provisions contained within this act are applied "uniformally", CDOT requires Uniform Act compliance on any project for which it has oversight responsibility regardless of the funding source. Additionally, the Fifth Amendment of the United States Constitution provides that private property may not be taken for a public use without payment of "just compensation." All impacted owners will be provided notification of the acquiring agency's intent to acquire an interest in their property including a written offer letter of just compensation specifically describing those property interests. A Right-of-Way Specialist will be assigned to each property owner to assist them with this process.

In certain situations, it may also be necessary to acquire improvements that are located within a proposed acquisition parcel. In those instances where the improvements are occupied, it becomes necessary to "relocate" those individuals from the subject property (residential or business) to a replacement site. The Uniform Act provides for numerous benefits to these individuals to assist them both financially and with advisory services related to relocating their residence or business operation. Although the benefits available under the Uniform Act are far too numerous and complex to discuss in detail in this document, they are available to both owner occupants and tenants of either residential or business properties. In some situations, only personal property must be moved from the real property and this is also covered under the relocation program. As soon as feasible, any person scheduled to be displaced will be furnished with a general written description of the displacing Agency's relocation program which provides at a minimum, detailed information related to eligibility requirements,

advisory services and assistance, payments, and the appeal process. It also provides notification that the displaced person(s) **will not be required to move without at least 90 days advance written notice. For residential relocatees, this notice cannot be provided until a written offer to acquire the subject property has been presented, and at least one comparable replacement dwelling has been made available.** Relocation benefits will be provided to all eligible persons regardless of race, color, religion, sex or national origin. Benefits provided under the Act, to which each eligible owner or tenant may be entitled, will be determined on an individual basis and explained to them in detail by an assigned Right-of-Way Specialist.

All reasonable opportunities to avoid relocations and minimize the impacts of acquisition to private and public property have been taken in the conceptual design of the Preferred Alternative. The Preferred Alternative is mostly centered in the existing right-of-way for the main roadway and, in general, balances parcel impacts at intersections in all directions. For new access locations between signalized intersections, the location of the access was adjusted to minimize impacts while still addressing traffic and safety needs.

For the nine businesses with parking impacts, most would be able to accommodate parking losses with other on-site parking locations. Loss if parking will be replaced or compensated by payment of damages through the Uniform Act process.

With recent growth pressure from rapid gains in the oil and gas industry, replacement property for the displaced business (Watermark Spas) is at a premium in the Grand Junction area. While the total number of commercial and industrial properties in the Grand Junction area is not readily available, numerous realtors have listings of commercial and industrial properties for sale or lease. Prices are highly variable (from tens of thousands of dollars to millions) depending on location and amenities. Opportunities to relocate to established business locations in the study corridor are currently very competitive and may require relocating to other established business locations in the city.

3.8 AIR QUALITY

The Clean Air Act (CAA) of 1970, which was last amended in 1990, requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment. These six criteria pollutants are carbon monoxide (CO), ozone (O_3), nitrogen oxide (NOx), sulfur dioxide (SO_2), lead (Pb), and particular matter (PM_{10} and since 1997, $PM_{2.5}$). The State of Colorado has adopted the NAAQS for these criteria pollutants.

3.8.1 Ambient Air Quality Monitoring

The Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD) monitors concentrations of the pollutants in ambient air. The APCD maintains two monitoring stations within the study corridor at 645 ½ Pitkin Avenue and 650 South Avenue, that measure CO, $PM_{2.5}$ and PM_{10}. Two natural high wind events have caused exceedances of the PM_{10} standard in Grand Junction since 2003. These events do not contribute to any violation of the ambient standard.

3.8.2 Air Quality Impacts

Geographic areas that exceed a particular NAAQS pollutant standard are considered "non-attainment" areas for that pollutant. Mesa County is in attainment for all criteria pollutants, and air and the transportation conformity provisions of the CAA do not apply to this project. This includes project level CO and PM hot spot modeling requirements. For this reason, no additional air quality analyses for criteria pollutants is required for this project.

There are no anticipated impacts to criteria pollutants due to the No Action or Preferred Alternatives.

3.8.3 Mobile Source Air Toxics - Compliance with 40 CFR 1502.22

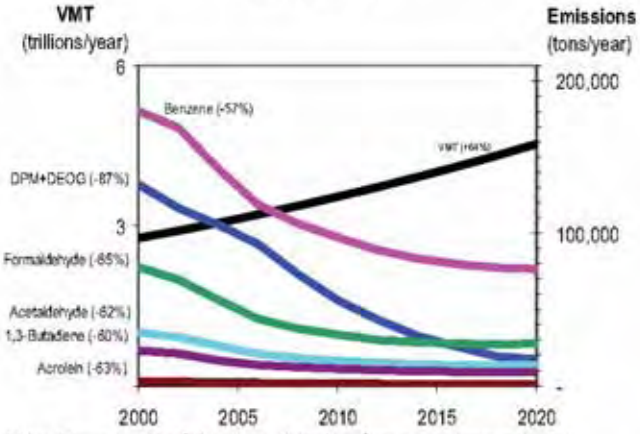
In addition to the criteria air pollutants for which there are NAAQS, EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in

fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources, 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64% increase in VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57% to 65%, and will reduce on-highway diesel PM emissions by 87%, as shown in **Figure 3-17**.

Figure 3-17 U.S. Annual Vehicle Miles Traveled (VMT) vs. Mobile Source Air Toxics Emissions, 2000-2020



Notes: For on-road mobile sources. Emissions factors were generated using MOBILE6.2. MTBE proportion of market for oxygenates is held constant, at 50%. Gasoline RVP and oxygenate content are held constant. VMT: Highway Statistics 2000 Table VM-2 for 2000, analysis assumes annual growth rate of 2.5%. "DPM + DEOG" is based on MOBILE6.2-generated factors for elemental carbon, organic carbon and SO4 from diesel-powered vehicles, with the particle size cutoff set at 10.0 microns.

As a result, EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(l) that will address these issues and could make adjustments to the full 21 and the primary six MSATs.

3.8.3.1 Unavailable Information for Project Specific MSAT Impact Analysis

This EA includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this EA. Due to these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information.

Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

1. **Emissions:** The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model--emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change

with changes in trip speed. Also, the emissions rates used in MOBILE 6.2 for both particulate matter and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, EPA has identified problems with MOBILE6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE 6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

2. Dispersion. The tools to predict how MSATs disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The NCHRP is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.
3. Exposure Levels and Health Effects. Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

3.8.3.2 Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs

Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at http://www.epa.gov/iris. The following toxicity information for the six prioritized MSATs was taken from the IRIS database Weight of Evi-

dence Characterization summaries. This information is taken verbatim from EPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** (DE) is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.
- **Diesel exhaust** also represents chronic respiratory effects, possibly the primary non-cancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes -- particularly respiratory problems[1]. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of impacts based upon theoretical approaches or research methods generally accepted in the scientific community. Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from the No Action and Preferred Alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

In this document, FHWA has provided a qualitative analysis of MSAT emissions relative to the various alternatives, and has acknowledged that the project build alternative may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the

1. South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 Studies on the relationship between health and air quality); NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein.

project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSATs, it can give a basis for identifying and comparing the potential differences among MSAT emissions-if any-from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at: www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm

3.8.4 MSAT Project Level Comparative Analysis

For each alternative in this EA, the amount of MSATs emitted would be proportional to the vehicle volumes assuming that other variables such as fleet mix are the same for each alternative. The average daily volumes estimated for the Preferred Alternative is higher than that for the No Action Alternative because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. Future traffic volume increases are most notable for the capacity improved mainline section of I-70B between 24 Road and Grand Avenue which is characterized by commercial and light industrial development. Differences between 2030 projected No Action and Preferred Alternative traffic volumes between 24 Road and Grand Avenue are 20% to 29% (see **Table 3-16**).

Differences between 2030 projected No Action and Preferred Alternative traffic volumes for the Pitkin and Ute Avenue couplet where most of the sensitive receivers are located are 5% to 8%. All affected sensitive receivers such as residences, parks and schools are located along these streets (see **Table 3-16**).

This increase in traffic volume would lead to higher MSAT emissions along the Preferred Alternative with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOBILE 6.2 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decrease would offset volume-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

Because the estimated traffic volume under the No Action and Preferred Alternatives are within 5% to 8% of each other along areas where sensitive receivers may be located, it is expected there would be no appreciable difference in overall MSAT emissions among the two alternatives. Also, regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57% to 87% between 2000 and 2020. Local conditions could differ from these national projections in terms of fleet mix and turnover, traffic volume growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study corridor would likely be lower in the future in nearly all cases.

Table 3-16 Summary of Daily Traffic Volumes for I-70B West Corridor

Segment (I-70B)	2006 Daily Volumes	2030 No Action Daily Volumes	2030 Preferred Alternative Daily Volumes	% Increase No Action Over Existing	Increase Preferred Alternative Over Existing
Redlands to 24.5 Rd	28,800	37,300	47,900	30%	66%
25 Rd to Independent	48,000	51,400	61,600	7%	28%
North Ave to Grand Ave	28,800	31,700	40,800	10%	42%
Pitkin-Ute Ave 4th to 5th	26,900	33,200	35,000	23%	30%
Pitkin-Ute Ave 13th to 15th	25,100	33,000	35,600	31%	42%

The additional travel lanes evaluated as part of the project would have the effect of moving some traffic closer to businesses; therefore, there could be localized areas where ambient concentrations of MSATs could be higher under the Preferred Alternative than under the No Action Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built along I-70B and Grand Avenue, under the Preferred Alternative. This is the area of roadway expansion closest to residential and sensitive receivers in the study corridor. No capacity expansion is anticipated along the residential corridors of Pitkin and Ute Avenues. Although traffic volumes would increase, traffic would continue to operate at a satisfactory level of service without notable congestion. However, as discussed above, the magnitude and the duration of these potential increases compared to the No Action Alternative cannot be accurately quantified due to the inherent deficiencies of current models.

In sum, when a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the Preferred Alternative could be higher relative to the No Action Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs would be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, would over time cause substantial reductions that, in almost all cases, would cause region-wide MSAT levels to be significantly lower than today.

3.8.5 Local MSAT Monitoring Program

Ambient air toxics monitoring is required as part of the efforts to control air toxics pollutants which consists of both national and community-scale programs. The Air Toxics Monitoring Steering Committee was established in 1999 to oversee the development of a national air toxics monitoring network. In 2002, the committee deployed the initial network including Grand Junction. Results from this study show that Grand Junction has some high levels of formaldehyde and acetaldehyde. These high levels are attributed to Grand Junction's higher altitude than other evaluated urban areas. Higher altitude creates more UV radiation, which can lead to increases in certain toxins. A contributing factor is the local geomorphology. Grand Junction is hemmed in by mountains and mesas that hold stagnant air to about a 5-mile radius around the city. And if weather conditions are right, the smoggy air is trapped in the Grand Valley by an inversion layer. Prevailing winds blow consistently out of the northwest and southeast. These winds help to disperse pollutants.

3.8.6 MSAT Mitigation Strategies

Lessening the effects of mobile source air toxics will be considered for projects with substantial construction-related MSAT emissions that are likely to occur over an extended building period, and for post-construction scenarios where the NEPA analysis indicates potentially meaningful MSAT levels.

3.8.6.1 Mitigating for Construction MSAT Emissions

Construction activity may generate a temporary increase in MSAT emissions. This project will employ dust suppressant strategies to control fugitive and re-entrained dust associated with construction activity and equipment traction.

Construction mitigation also includes strategies that reduce engine activity or reduce emissions per unit of operating time. Operational agreements that reduce or redirect work or shift times to avoid community exposures can have positive benefits when sites are near vulnerable populations. For example, agreements that stress work activity outside normal hours of an adjacent school campus would be operations-oriented mitigation. Also on the construction emissions front, technological adjustments to equipment, such as off-road dump trucks and bulldozers, could be appropriate strategies. These technological fixes could include particulate matter traps, oxidation catalysts, and other devices that provide an after-treatment of exhaust emissions. The use of clean fuels, such as ultra-low sulfur diesel, also can be a very cost-beneficial strategy. Other opportunities could be to prohibit unnecessary idling of construction equipment, locating diesel engines and motors as far away as possible from potential receivers, same for staging areas, and/or require heavy construction equipment to use the cleanest available engines. (See Section 3.18.3, Construction Mitigation).

The EPA has listed a number of approved diesel retrofit technologies; many of these can be deployed as emissions mitigation measures for equipment used in con-

struction. This listing can be found at: www.epa.gov/outage/retrofit/retroverifiedlist.htm

3.8.6.2 Post-Construction Mitigation for Projects with Potentially Significant MSAT Levels

Longer-term MSAT emissions can be more difficult to control, as variables such as daily traffic and vehicle mix are elusive. Operational strategies that focus on speed limit enforcement or traffic management policies may help reduce MSAT emissions even beyond the benefits of fleet turnover. Well-traveled highways with high proportions of heavy-duty diesel truck activity may benefit from active Intelligent Transportation System programs, such as traffic management centers or incident management systems. Similarly, anti-idling strategies, such as truck-stop electrification can complement projects that focus on new or increased freight activity. Other modes of transport are also encouraged and supported.

3.9 NOISE

Noise analysis for this project was conducted in accordance with CDOT noise guidelines, which are set forth in the document entitled *CDOT Noise Analysis and Abatement Guidelines*, December 2002 and is documented in the *I-70B West Noise Analysis Technical Report*, 2007. The CDOT guidelines are consistent with national guidelines established by FHWA.

The CDOT guidelines specify the criteria for determining traffic noise impacts to various land uses. **Table 3-17** lists the Colorado Noise Abatement Criteria (NAC) for each land use. When an impact is identified, mitigation measures, such as noise walls, must be considered.

Land uses where traffic noise is typically a sensitive issue include parks, schools, and residential areas with frequent outdoor use. According to the CDOT guidelines, for these land uses, an impact occurs when traffic noise levels meet or exceed 66 dB(A). Additionally, an increase of 10 dB(A) between existing and future conditions due to noise from a proposed action is considered substantial and is also an impact, regardless of the land use category. For commercial land uses impacts occur when traffic noise levels meet or exceed 71 dB(A).

If a proposed action results in traffic noise levels that meet or exceed the Noise Abatement Criteria, additional analysis must be done to determine if noise mitigation would be feasible and reasonable.

Table 3-17 Colorado Noise Abatement Criteria (NAC)

Activity Category	CDOT Leq (h)	Description of Activity Category
A	56 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	66 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	71 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.

Source: Colorado Department of Transportation, Noise Analysis and Abatement Guidelines, December 2002

3.9.1 Existing Conditions

Although much of the land use adjacent to I-70B is light industrial or commercial, there are noise-sensitive land uses in the study corridor. These include:

- Westlake State Wildlife Area adjacent to the north of I-70B and east of 25½ Road.
- Westlake Mobile Home Park and residential development located at 2 ½ Road and Independent Avenue.
- Residential development at Ouray Avenue and 1st Street.
- Emerson School and Whitman Education Center.
- Private residences located along Pitkin and Ute Avenues.
- Whitman and Emerson Parks located between Pitkin and Ute Avenues at 4th Street and 9th Street, respectively.

Nearby generators of noise include two active Union Pacific Railroad freight lines parallel to I-70B on the south.

Noise measurements were taken in 2006 at five locations within the study corridor to develop and validate a traffic noise model for use in predicting future traffic noise levels. Validation measurements can be found in the *I-70B West Noise Analysis Technical Report*, 2007. Noise levels were then modeled using the FHWA-approved TNM 2.5 model for existing and future (2030) conditions for the Preferred and No Action Alternatives at 228 locations shown in **Figure 3-18**. These locations correspond to noise-sensitive land uses within the study corridor, including residences, one school, an urban wildlife area, and two neighborhood parks.

3.9.2 Noise Impacts

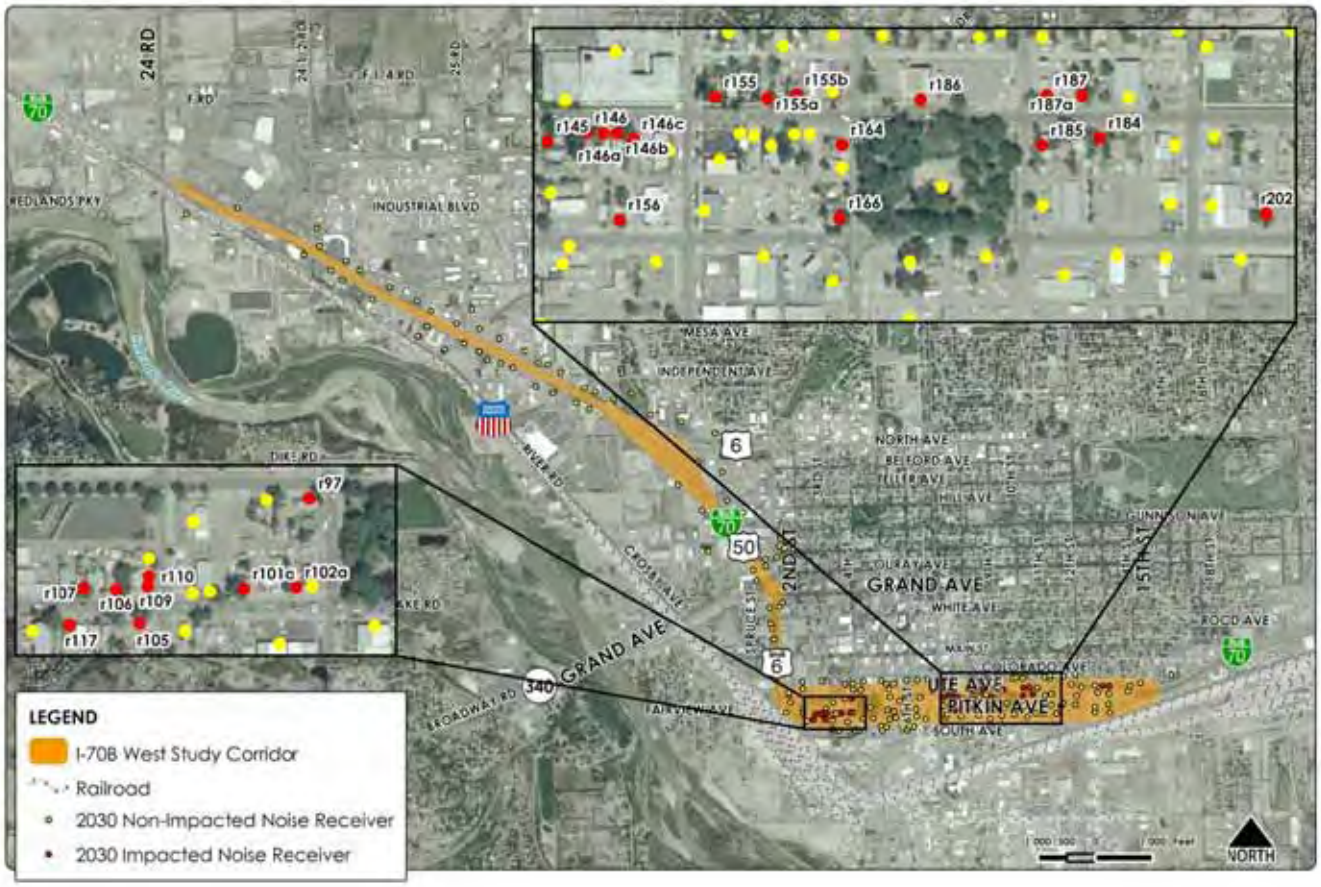
3.9.2.1 No Action Alternative

The 2030 No Action Alternative traffic noise levels predicted by the model for the 228 receptor locations range from 51 to 70 dB(A), which is an increase of 1 to 2 dB(A) over existing noise levels. A total of 26 modeled locations (representing 48 residences) would exceed the Noise Abatement Criteria of 66 dB(A) in 2030. Of that number, 17 model locations are at or above the 66 dB(A) threshold today. All affected residences are located along the Pitkin Avenue and Ute Avenue one-way couplet through the downtown area. Noise levels for affected sensitive receptors are listed in **Table 3-18** and shown in **Figure 3-18.**

3.9.2.2 Preferred Alternative

The predicted 2030 Preferred Alternative traffic noise levels for the same 228 locations within the study corridor range from 51 to 71 dB(A). Noise levels at individual receptors would increase at most by 1 to 2 dB(A) compared to the existing conditions. There would be no capacity increase or roadway alignment changes to Pitkin and Ute Avenues associated with the Preferred Alternative so that noise impacts modeled for the Preferred Alternative would be the same as those for the No Action Alternative in that area.

Figure 3-18 Noise Measurement and Receptor Sites



Noise levels for impacted receptors are listed in **Table 3-18** and are indicated in red on **Figure 3-18**. The analysis reveals 26 modeled locations would be impacted with noise levels above 66 dB(A) for the Preferred Alternative as well as the No Action Alternative.

During construction of the Preferred Alternative, noise would be generated by diesel-powered earth moving equipment such as dump trucks and bulldozers, back-up alarms on certain equipment, and compressors. Construction noise at receptor locations are usually dependent on the loudest one or two pieces of equipment operating at the moment. Noise levels from diesel-powered equipment range from 80 dB(A) to 95 dB(A) at a distance of 50 feet.

Table 3-18 Noise Levels for Impacted Receivers

Site ID	NAC (dBA) (# receivers)	2006 Existing Noise (dBA)	2030 No Action (dBA)	2030 Preferred Alternative (dBA)	Difference between Preferred Alternative and Existing (dBA)
r97	66(1)	67.6	69.6	69.6	2
r101a	66(1)	67.2	69.2	69.2	2
r102a	66(1)	66.6	68.6	68.6	2
r105	66(5)	66.4	68.5	68.5	2.1
r106	66(2)	67.4	69.4	69.4	2
r107	66(2)	67.1	69.0	69.0	1.9
r109	66(1)	66.5	68.5	68.5	2
r110	66(1)	64.6	66.6	66.6	2
r117	66(1)	66.0	67.8	67.8	1.8
r145	66(3)	65.0	67.1	67.1	2.1
r146	66(1)	66.9	69.0	69.0	2.1
r146a	66(1)	66.9	68.9	68.9	2
r146b	66(1)	66.9	69.0	69.0	2.1
r146c	66(1)	65.7	67.8	67.8	2.1
r155	66(3)	66.2	68.3	68.3	2.1
r155a	66(2)	66.6	68.6	68.6	2
r155b	66(1)	65.8	67.8	67.8	2
r156	66(2)	66.4	68.5	68.5	2.1
r164	66(1)	64.8	66.8	66.8	2
r166	66(3)	66.4	68.4	68.4	2
r184	66(4)	66.0	68.0	68.0	2
r185	66(2)	64.7	66.7	66.7	2
r186	66(1)	67.0	69.1	69.1	2.1
r187	66(3)	65.9	67.9	67.9	2
r187a	66(3)	65.9	68.0	68.0	2.1
r202	66(1)	65.5	67.5	67.5	2

3.9.3 Noise Mitigation

Based on CDOT's noise guidance, noise barriers were evaluated along Pitkin and Ute Avenues but determined not to be feasible and/or reasonable.

Noise mitigation was investigated for affected residences along Pitkin and Ute Avenues. Results from this analysis indicate that it would not be feasible to construct noise mitigation for these small clusters of homes located very close to the roadway within a predominately commercial area. For noise mitigation to be feasible, a continuous barrier without gaps would be required. Openings or gaps in a noise wall reduce the effectiveness of noise abatement so that the minimum feasible 5 dB(A) insertion loss cannot be achieved. Openings within the noise wall for homeowner sidewalk and street accessibility would not be allowed. This would not be a practical or acceptable situation for affected homeowners, thus, any structural wall constructed within these very tight constraints would not be considered feasible. To meet CDOT cost-benefit criterion, four or more contiguous homes would have to agree to construction of a noise wall to be considered reasonable. The *I-70B West Noise Analysis Technical Report* details the results of this analysis.

Construction noise impacts, while temporary, will be mitigated by limiting work to daylight hours near residential areas and by requiring the contractor to use well-maintained equipment (particularly mufflers), to the extent feasible (see **Section 3.18** Construction). Any nighttime construction is subject to variance from any local city noise ordinance.

3.10 WATER RESOURCES AND WATER QUALITY

3.10.1 Existing Conditions

The study corridor is located northeast of the Colorado River and downstream from its confluence with the Gunnison River. Both rivers are within the second largest basin in Colorado draining approximately 17,000 square miles at the Colorado/Utah state line. The Colorado River immediately upstream (near Palisade), drains approximately 9,000 square miles, while the Gunnison River drains approximately 8,000 square miles from the south. Both rivers are considered extremely important to the economy and character of the community of Grand Junction; Grand Junction was named for the "grand junction" of these two rivers.

3.10.1.1 Surface Water

The City of Grand Junction relies entirely upon surface water for its public water supply (City of Grand Junction, 2004). The major surface water resource in the vicinity of the study corridor is the Colorado River, which parallels I-70B at distances ranging from approximately 1,000 feet to one mile. The Colorado River adjacent to the study corridor has been designated as a navigable water by the U.S. Army Corps of Engineers. Designated uses, as classified by the EPA and CDPHE, for the Colorado River from its confluence with the Gunnison River to the Colorado state line, are agriculture, coldwater aquatic life, domestic water source, and recreation.

An ephemeral stream, Leach Creek, exists near the western terminus but outside the study corridor. Leach Creek flows adjacent to 24 Road collecting irrigation return flows and draining to the Colorado River. Leach Creek is not classified by EPA and CDPHE.

The Ligrani Drain occurs within the study corridor near the I-70B/North Avenue interchange. This ditch was originally developed in the early 1900s to drain and lower groundwater levels within the southwest Grand Junction area. The drain now receives runoff from I-70B and North Avenue (U.S. 6 Bypass) and eventually conveys the runoff to the Colorado River. Several detention basins have been developed north of the I-70B and North Avenue interchange to receive Ligrani Drain overflow during extreme precipitation and runoff events. Occasionally runoff will exceed the capacity of the Ligrani Drain resulting in minor flooding of the Motor Street and frontage road intersection and parking lots north of the intersection. Ligrani Drain is not classified by EPA and CDPHE.

A pond of approximately 1.7 acres is located north of I-70B between Rimrock Avenue and Motor Street (Westlake). This pond primarily serves as a wildlife habitat area managed by the Colorado Division of Wildlife and provides habitat for urban wildlife and fish species. The capacity of this pond has recently been increased to accommodate increasing runoff from surrounding developments and occasionally receives inflow from the Ligrani Drain during extreme precipitation events. Water

from the Ligrani Drain during extreme precipitation events, will back up and crest the southern edge of Westlake. The Westlake Pond is not classified by EPA and CDPHE.

3.10.1.2 Groundwater

Groundwater resources in Colorado range from non-tributary aquifers to shallow alluvial or tributary aquifers. Most of Mesa County, including the study corridor, is not underlain by a principal aquifer. The two main hydrogeologic units beneath the study corridor include the unconfined shallow alluvial aquifer and an underlying aquitard. The alluvial aquifer is characterized by unconsolidated clays, silts, sand, gravel and cobble. The underlying aquitard is composed of low-permeability shale units of the Mancos Shale and Dakota Sandstone formations (Department of Energy, 1999). In the Grand Junction area, irrigation canals and ditches seasonally influence groundwater levels and act as a local source of recharge to the alluvial aquifer.

3.10.1.3 Water Quality

Overall, water quality in the Colorado River main stem and its tributaries, including the Gunnison River, is good. However, these water bodies are subject to elevated salinity levels due to naturally occurring springs and agricultural drainage through saline deposits. Water quality has been compromised by naturally occurring selenium, historical uranium milling activities, and urban/suburban development in the vicinity of the study corridor (Envirocast, 2006).

The Clean Water Act requires states to adopt water quality standards to protect the nation's waters. These standards define how much of a pollutant can be in a surface and/or ground ware while still allowing it to meet its designated uses, such as for drinking water, fishing, protection of aquatic life, swimming, irrigation or industrial purposes.

Section 303(d) of the Clean Water Act requires states to submit to EPA a list of those waters that are not meeting their designated uses because of excess pollutants. These include waterbodies where it is known that water quality does not meet applicable water quality standards, and/or it is not expected to meet applicable water quality standards and for which technology-based effluent limitations (and other required controls) are not stringent enough to implement water quality standards. The Colorado River, from its confluence with the Gunnison River to the Colorado state line, has recently (April 2006) been listed as "impaired" because of increased selenium concentrations. Selenium is a naturally occurring trace element found in Mancos shale throughout the Upper Colorado River Basin (United States Geologic Survey, 1996-1998). Selenium can be very mobile in the environment and this mobility can be accelerated by irrigation. As irrigation water is applied to soils containing selenium, the selenium is leached out of the soils and into surface and groundwater. Selenium can be toxic to fish and wildlife. Currently, CDPHE has not established a total maximum daily limit for selenium in the lower Colorado River. This is expected in late 2008.

The Persigo Wastewater Treatment Plant (approximately 11 miles northwest of the study corridor) treats domestic sewage for the City of Grand Junction. The plant also treats non-domestic wastewater through its industrial pretreatment (IP) program. Persigo is required to develop and implement an IP program as a condition of their National Pollutant Discharge Elimination System (NPDES) permit. The Persigo IP program was approved by EPA in 1984 and has been successfully implemented since that time.

3.10.2 Water Resources and Water Quality Impacts

Water resources within the vicinity of the study corridor consist of elements that maintain the local ecosystem of the Grand Valley and support local economic vitality. The resources include the Colorado and Gunnison Rivers and associated tributaries, all of which, to varying degrees, support floodplains, drinking water supplies, recreation, wildlife, aquatic life and habitat, and water quality of the Grand Valley. In general, these resources can be impacted by various human activities.

3.10.2.1 No Action Alternative

Within the I-70B West study corridor, there would be no direct impacts to water resources or water quality, including aquatic life and habitat, as a result of the No-Action Alternative. Indirect impacts of continued growth and development throughout the study corridor will, however, occur. This growth and development will result in additional roadways, commercial parking lots, and residential roofs, sidewalks, and driveways thus increasing the overall impervious surfaces of the area and changing the runoff characteristics.

3.10.2.2 Preferred Alternative

The Colorado River is not expected to be directly impacted by the construction or operation of the Preferred Alternative. Additionally, several major facilities lie between the Preferred Alternative and the Colorado River. Currently, River Road (under construction as a component of the Riverside Parkway project) and the Union Pacific Railroad grade provide barriers to much of the runoff generated from the construction and operation of the Preferred Alternative.

Leach Creek is located near the western terminus of the Preferred Alternative along 24 Road, but is beyond the limits of construction for the proposed improvements. No direct impacts to Leach Creek are anticipated.

The Ligrani Drain flows beneath I-70B within a culvert. The Preferred Alternative includes widening of I-70B at this location with the Ligrani Drain continuing to be contained within a culvert. Potential impacts to water resources within the drain include temporary increases in sedimentation as a result of the erosion of soils disturbed during reconstruction of the roadway and replacement/extension of the culvert. Post-construction or operation impacts to the Ligrani Drain adjacent to the roadway include sedimentation and water quality degradation as a result of stormwater runoff from the impervious roadway surface.

The surface water pond (1.7 acres) within the Westlake State Wildlife Area located within the study corridor north of I-70B between Rimrock Avenue and Motor Street would not be directly impacted by widening of I-70B. The alignment of I-70B has been shifted south to avoid impacts to this pond and adjacent wetlands. Westlake pond would continue to receive runoff from surrounding areas including the occasional backflow from the Ligrani Drain during periods of extreme precipitation.

Stormwater discharges are generated by runoff from land and impervious areas, such as paved streets, parking lots, driveways, and building rooftops during precipitation events. Stormwater runoff often contains sediment and/or pollutants in quantities that could adversely affect water quality. Types and concentration of pollutants in roadway runoff are highly variable and can be affected by such factors as traffic volumes, climate, maintenance practices, urbanization, vegetation and soil type on the right-of-way, and institutional characteristics, such as litter laws, automobile emissions, and other factors. A direct effect of sediments into receiving waters is the increase in turbidity and the concentration of suspended solids.

The volume of stormwater runoff carrying pollutant loads and non-point source pollutants increases proportionately with the amount of impervious surface area. The Preferred Alternative would increase the impervious surface within the study corridor by approximately 4.5 acres. Currently, there are approximately 70 acres of impervious surfaces within the proposed limits of construction of the Preferred Alternative. The additional 4.5 acres represents an increase of 6% over the existing impervious surface area.

Capacity and mobility improvements associated with the Preferred Alternative could result in indirect impacts as a result of new development and redevelopment, and an increase in impervious surfaces (secondary roads, parking lots, etc.); however, increased growth and development are projected to occur, regardless of whether the Preferred Alternative is implemented. Without mitigation, the potential increase in impervious surface area from surrounding development and from the Preferred Alternative could lead to more runoff and increased sedimentation.

The Preferred Alternative involves only shallow depths of excavation and re-paving and would not disturb soils associated with the selenium-containing Mancos Shale sufficiently to cause extensive leaching of selenium. Any leaching of selenium from disturbed soils would be localized and temporary. The Preferred Alternative would not be expected to release any contamination or cause major erosion control problems that might impact water bodies in the study corridor. None of the sites with recognized environmental conditions identified in Section 3.17, Hazardous Materials are located within the floodplain for the Colorado River.

Indirect effects to water quality could include acceleration of construction of additional impervious surface areas as new development occurs along the new transportation facility. Runoff from these surfaces could increase the volume of water and contaminants to local water ways, although local stormwater runoff regulations would generally mitigate the harmful aspects.

3.10.3 Water Resources and Water Quality Mitigation

Without proper planning, adverse water quality impacts may occur during construction. One such problem is accelerated soil erosion, which could result in contamination of wetlands and waterways. The primary pollutant of soil erosion is sediment. Sediment discharged into receiving waters increases turbidity, heightens costs for water treatment, and affects aquatic plant and wildlife species. In addition to impacts during construction, impacts from highway operations may affect water resources.

Runoff generated from the Preferred Alternative would be directed to detention structures prior to being released to ditches and drains flowing into the Colorado River.

The use of standard erosion and sediment control BMPs in accordance with *Erosion Control and Storm Water Quality Guide*, CDOT, 2002, will be included in the final design plans. All work on this project will be in conformity with Section 107.25 (Water Quality Control) and Section 208 (Erosion Control) of the *CDOT Standard Specifications for Road and Bridge Construction.* The design will also comply with the policy of Executive Order 11990 regarding impacts to wetlands.

Water quality mitigation will adhere to the Municipal Separate Storm Sewer System (MS4) permit requirements and programs defined within the MS4 permit. Four agencies hold MS4 permits in the study corridor: CDOT, the Grand Junction Drainage District, the City of Grand Junction, and Mesa County. The criteria developed for each of these permits will need to be reviewed prior to final design and construction. Because these permits may overlap geographically and in content, close coordination between the four agencies holding MS4 permits will be required to identify and implement the elements of the permits.

In addition to MS4 control measures, the following specific BMPs from *CDOT's Erosion Control and Storm Water Quality Guide* will be applied during construction to reduce construction-related and/or long-term operation impacts to water resources and water quality, as appropriate:

- All disturbed areas will be revegetated with native grass and forb species. Seed, mulch, and mulch tackifier will be applied in phases throughout construction.
- Where permanent seeding operations are not feasible because of seasonal constraints (e.g., summer and winter months), disturbed areas will have mulch and mulch tackifier applied to prevent erosion.
- Erosion control blankets will be used on steep, newly seeded slopes to control erosion and to promote the establishment of vegetation. Slopes should be roughened at all times and concrete washout contained.
- Temporary erosion control blankets will have flexible natural fibers.
- Erosion bales, erosion logs, silt fence or other sediment control devices will be used as sediment barriers and filters adjacent to wetlands, surface waterways, and at inlets where appropriate.
- To minimize the loss of sand from the road surface during winter sanding operations, sediment catch basins will be included during construction and put in place permanently with continual maintenance.
- Where appropriate, slope drains will be used to convey concentrated runoff from top to bottom of the disturbed slopes. Slope and cross-drain outlets will be constructed to trap sediment.
- Storm drain inlet protection will be used where appropriate to trap sediment before it enters the cross-drain.
- Check dams will be used where appropriate to slow the velocity of water through roadside ditches and in swales.
- Work areas will be limited as much as possible to minimize construction impacts to vegetation.
- Temporary detention ponds (during construction) will be used to allow sediment to settle out of runoff before it leaves the construction area. These ponds may be combined with permanent detention ponds.
- Structural BMPs may include extended detention basins with sediment forebays, grass swales, and grass buffers to retain sediment and roadway pollutants resulting from winter sanding, chemical deicing, and normal traffic operations.
- Implement temporary and permanent BMPs for erosion control, sediment control, and drainageway protection as required by local and state permitting requirements.

- Non-structural BMPs may include litter and debris control, and landscaping and vegetative practices.
- Settling ponds will be used for effluent from dewatering operations, if needed.

Water utilized for construction and/or irrigation will be derived through municipal sources. Therefore, allocations will not exceed the upper Colorado River Basin threshold.

If contaminated groundwater is encountered during the dewatering process, mechanisms will be in place to analyze groundwater for contaminants and effectively treat this groundwater pumped discharge, as necessary. Additional mitigation for hazardous materials is described in Section 3.17.3.

3.11 FLOODPLAINS

Executive Order 11988, Floodplain Management, requires Federal agencies "to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative." The base floodplain (100-year flood) is the regulatory standard used by federal agencies, and most states, to administer floodplain management programs. As described in the 23 CFR 650, Subpart A, floodplains provide natural and beneficial values serving as areas for fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural flood moderation, water quality maintenance, and groundwater recharge.

The study corridor is located approximately 1,000 feet to one mile north of, and roughly parallel to, the main channel of the Colorado River. In the western portion of the study corridor the southern edge of I-70B is about 100 feet from a side channel from the main river.

3.11.1 Existing Conditions

A review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) show that portions of the study corridor are located in FEMA-mapped flood zones. Small portions along the northern and southern boundaries of the western portion of the study corridor are located within Zone AO and Zone AE flood areas. Most areas are in Zone X, which places them outside of the delineated flood zone. The specific locations and descriptions of the flood zones are provided in **Table 3-19**. **Figure 3-19** depicts the floodplains within the study corridor.

The Zone AO flood area is on the north side of I-70B, from 24 Road to approximately 800 feet west of 24 Road. Based on engineering judgement and interpretation of the FIRM, this flood area appears to be a backwater flooding effect from the Leach Creek drainage as it crosses under I-70B.

The AE zone begins on the west near Redlands Parkway and extends eastward in bands along I-70B. On the southern right-of-way the band is about 200 feet wide and extends east of 24 Road for about 1,400 feet. This zone is noted as "flooding effects from Leach Creek" on the FIRM. Based on hydraulic analysis performed for the Riverside Parkway project, this flood area is a backwater effect from the existing UPRR bridge over Leach Creek, which is not adequately sized to convey flood flows under the railroad. On the northern side, the band extends from I-70B to the southern loop road of the Mesa Mall. The band is about 250 feet wide and extends east of 24 Road for about 2,300 feet, to just east of 24 ½ Road. This area is the floodplain from the Horizon Drive Channel.

Table 3-19 Flood Zone Descriptions

Flood Zone Designation	Description
Zone X	• Areas of minimal flood hazard from the principal source of flood in the area and determined to be outside of the 0.2% chance (500-year) floodplain; or areas determined to be outside of the 500-year floodplain.
Zone AO	• Areas subject to a 1% or greater annual chance of flooding in any given year. Flooding is usually in the form of sheet flow with average depth of 1 to 3 feet. Average flood depths are shown as derived from detailed hydraulic analysis.
Zone AE	• Areas subject to a 1% or greater annual chance of flooding in any given year. Base flood elevations are derived from detailed hydraulic analysis.

Figure 3-19 Floodplains

Sources: FEMA - FIRM Panel No. 080115 0460B and Panel No. 080117 0003E (City of Grand Junction), dated July 15, 1992. (Mesa County), dated July 15, 1992. Federal Emergency Management Agency, FEMA Issued Flood Maps. http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=23736542&IFIT=1 and http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=23845844&IFIT=1 Accessed: April 3, 2007.

3.11.2 Floodplain Impacts

3.11.2.1 No Action Alternative

The No Action Alternative would result in no new encroachment on the 100-year floodplain.

3.11.2.2 Preferred Alternative

The impacts to the floodplains from the Preferred Alternative would be minimal (approximately 1.2 acres total). The Preferred Alternative generally follows the existing alignment and grade of I-70B, and the intent is to construct improvements within the existing right-of-way. No major realignments or changes in grade that would cause new large fill slopes are proposed. Existing floodplain boundaries are adjacent to I-70B for the western-most 2,300 feet of the study corridor, but the floodplain does not currently encroach onto the roadway itself.

The Leach Creek drainage crossing of I-70B is being improved by the City of Grand Junction under a separate project. These improvements are just west and outside of the study corridor. The existing floodplain on the south side of I-70B extends for about 1,400 feet east of 24 Road. This floodplain area is a backwater from the existing bridge crossing of the UPRR, and is therefore "ineffective flow." Encroachment into this floodplain with the proposed limits of construction will be avoided as much as possible. However, minor amounts of fill placed within the floodplain boundary would not have an adverse impact on the floodplain. This floodplain area is being mitigated by the Riverside Parkway project.

A new 84-inch jacked steel pipe is being added to the existing UPRR crossing to provide additional hydraulic capacity. Because of this improvement, the City of Grand Junction is in the process of revising the floodplain boundary in this area, which will further reduce potential impacts from proposed I-70B West improvements.

The floodplain for the Horizon Drive Channel is on the north side of I-70B for about 2,300 feet east of 24 Road. The floodplain lies between I-70B and the southern loop road for the Mesa Mall. The Preferred Alterative would reconfigure three of the existing access points from I-70B into the mall, as well as the intersection at 24 ½ Road. Each of these locations is within the existing floodplain. The existing floodplain encroaches onto the accesses, as well as portions of the loop road, 24 ½ Road, and Industrial Boulevard to the northeast. This is likely caused by having multiple undersized culvert crossings along this major drainageway within a relatively short distance. The proposed widening of I-70B would cause an encroachment into the natural channel. However, since several access roads and a major intersection are being improved with the Preferred Alternative, there would also be an opportunity to improve these existing culvert crossings. Although the limits of the widened roadway and reconfigured intersections encroach onto the existing floodplain, culvert and channel improvements would be designed to reduce floodplain impacts and keep the major flows contained within the natural channel.

The Preferred Alternative would not cause a substantial change in flooding risk. However, there could be some adjacent development in incompatible floodplain locations that would be served by the Preferred Alterative, and some flooding risks remain in the westernmost portion of the study corridor.

3.11.3 Floodplain Mitigation

BMPs will be followed to reduce temporary and permanent impacts, if any. Specific BMPs to be used in the study corridor will not be determined until final design. Additional mitigation measures also include:

- Avoid excess application and introduction of chemicals into the aquatic ecosystem, while temporary fills will utilize fill that avoids an increase in suspended solids or pollution.
- Construction staging areas will be located a distance of greater than 100 feet from adjacent stream/riparian area to avoid disturbance to existing vegetation, to avoid point source discharges, and to prevent spills from entering the aquatic ecosystem (including concrete washout).
- Erosion, sedimentation, and revegetation techniques, as well as the use of standard erosion control measures, will be used to minimize impacts to the floodplain, streambanks and shoulders. All disturbed areas will be appropriately revegetated with native vegetation.
- Final design will adhere to City and CDOT hydraulic design criteria for major and minor storm drainage.
- Coordination will be conducted with City of Grand Junction, Mesa County, and FEMA on any encroachment of the floodplain, and adherence to hydraulic design criteria.
- Floodplain permits, including a floodplain development permit, Conditional Letter of Map Revision, and Letter of Map Revision will be acquired for floodplain encroachment.
- During design of the Preferred Alternative, avoidance of longitudinal and significant encroachments into the floodplains will be implemented.
- Any changes in historical flow paths will be avoided.
- Final design will adhere to all FEMA requirements and all hydraulic designs will conform to the requirements of 23 CFR 650.
- Culvert and channel improvements will be designated to convey 100-year flows, and will follow CDOT recommendations for the 50- to 100-year flood event capacity.

3.12 WETLANDS

This section generally describes the existing wetland resources in the study corridor, including wetland size, type, and function. Estimated project impacts are described and design methods to avoid and minimize impacts are explained.

3.12.1 Wetlands Field Survey

Wetland delineations for areas of anticipated impact were conducted in accordance with the USACE 1987 *Wetlands Delineation Manual* (Environmental Laboratory 1987) and Executive Order 11990. Field conditions were optimum for delineation when the data sheets were filled out on August 31 and September 1, 2006. Wetland determination was based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. According to the 1987 manual, wetlands are those areas inundated or saturated at a frequency and duration sufficient to support, and under normal circumstances or conditions, do support a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetland functions and values were determined using a method developed by Carter & Burgess, Inc. for assessing Colorado wetlands. This method is based on the Montana Department of Transportation's Montana Wetland Assessment Method (1999), but modified to meet Colorado conditions.

3.12.2 Existing Conditions

As shown on **Figure 3-20** there are seven wetland sites totaling 0.096 acres within the study corridor. **Table 3-20** provides a summary of the existing wetland conditions. Detailed information on the existing wetlands in the study corridor is presented in the *I-70B Wetland Finding* prepared for this project, (see Appendix D).

Figure 3-20 Wetlands

Table 3-20 Wetlands

Site ID	Acres within the Study Corridor	USACE Jurisdictional?	Wetland Type*	Comments
Wetland 1	0.052	Yes	Emergent	Ditch
Wetland 2	0.013	Yes	Emergent	Ditch
Wetland 3	0.010	Yes	Emergent	Ditch
Wetland 4	0.003	No	Emergent	Stormwater Detention
Wetland 5	0.007	Yes	Emergent	Ligrani Drain
Wetland 6	0.010	Yes	Emergent	Ligrani Drain
Wetland 7	0.001	Yes	Emergent	Ditch
TOTAL	**0.096**			

**Cowardin, L.M. et al., 1979. Classification of Wetland and Deepwater Habitats of the United States. United States Fish and Wildlife Service (USFWS), Biological Services Program; FWS/OBS-79/31.*

Wetland systems vegetated with trees, shrubs, or persistent emergent wetland plant species are classified as palustrine (Cowardin, et al, 1979). Palustrine wetlands include all non-tidal wetlands dominated by trees, shrubs, and vascular and non-vascular plants.

Wetland types in the study corridor are palustrine emergent (dominated by grasses, sedges and forbs) with vegetation adapted to water saturated or inundated soils. These roadside and drainage ditch wetlands contain a variety of emergent wetland plant species: narrowleaf cattail (*Typha angustifolia*), creeping spikerush (*Eleocharis palustris*), woolly sedge (*Carex lanuginosa*), lady's thumb (*Persicaria maculata*), softstem bulrush (*Schoenoplectus lacustris validus*), buttercup (*Ranunculus spp.*), barnyard grass (*Echinochola crusgalli*), reed canarygrass (*Phalaroides arundinacea*), common reed (*Phragmites australis*), curly dock (*Rumex crispus*), showy milkweed (*Asclepias speciosa*), and inland saltgrass (*Distichlis spicata*).

Within the study corridor, there are seven small roadside ditch or cross culvert pipe wetlands. Wetland boundaries are very distinct. Because of the ditch shape, once a certain elevation above the water is reached, wetland vegetation is no longer sustainable. The functions of these roadside ditches are extremely limited because of the small wetland size and location within the landscape. Existing functions include sediment/toxin retention, nutrient removal/transformation, bank stabilization, and storage for surface water flows. The wetlands have no aquatic habitat function, little wildlife habitat, and offer no educational or recreational possibilities.

All wetlands (except #4) are jurisdictional. The USACE has concurred with this determination in a letter dated February 8, 2008 - File number SPK-2007-01602 (see Appendix C). Total acreage of wetlands within the study corridor is 0.096 acre. **Table 3-20** lists the wetlands with their size, type, and predicted jurisdictional determination.

3.12.3 Wetland Impacts

3.12.3.1 No Action Alternative

No wetlands would be permanently impacted by the No Action Alternative.

3.12.3.2 Preferred Alternative

Based on preliminary design plans to widen I-70B west of the North Avenue interchange, there would 0.013 acre of permanent wetland impacts due to fill associated with the new roadway improvements. Permanent impacts would occur at wetland 3 (roadside ditch) and at non-jurisdictional wetland 4 (stormwater detention area) with 0.010 acre and 0.003 acre of impact, respectively. Both impacted wetlands are of low quality, functions and value.

Temporary wetland impacts may occur at wetland 1 where the area would be regraded and reconfigured. It would take a growing season to re-establish wetland plants in the new ditch bottom.

3.12.3.3 Avoidance and Minimization

Impacts to wetland 6 were avoided by locating the ramp and sidewalk fill slope outside of the wetland boundary.

The use of CDOT-approved best management practices (BMPs) will be used to offset the extent and duration of any temporary impacts.

All appropriate BMPs to prevent temporary impacts to wetlands will be followed during construction. These BMPs could include:

- Wetland areas not permanently impacted by the project will be protected from construction activities by temporary and/or construction limit fencing.
- Sediment control measures will be installed where needed to prevent sediment from filling wetlands.
- Fertilizers or hydro-mulching will not be allowed within 50 feet of a wetland.
- All disturbed areas will be revegetated with native grass and forb species. Seed, mulch, and mulch tackifier will be applied in phases throughout construction.
- Where permanent seeding operations are not feasible because of seasonal constraints (e.g., summer and winter months), disturbed areas will have mulch and mulch tackifier applied to prevent erosion.
- Erosion bales, erosion logs, silt fence, or other sediment control devices will be used as sediment barriers and filters adjacent to wetlands, surface waterways, and at inlets where appropriate.
- Where appropriate, slope drains will be used to convey concentrated runoff from top to bottom of the disturbed slopes. Slope and cross-drain outlets will be constructed to trap sediment.
- Storm drain inlet protection will be used where appropriate to trap sediment before it enters the cross-drain.

Looking Southeast at Wetland 2

- Check dams will be used where appropriate to slow the velocity of water through roadside ditches and in swales.

With proper BMPs for stormwater runoff and construction disturbances, minimal sediment should ever reach any wetland area. The toes of new construction will be stabilized with silt fence or erosion logs.

3.12.4 Wetland Mitigation

Section 404 permitting requirements will be discussed with the USACE. Since total permanent impacts are estimated to be 0.013 acre - 0.010 acre of impacts to a jurisdictional wetland and 0.003 acre of impact to a non-jurisdictional wetland - this project may meet the conditions of nationwide permit (NWP) #14 for linear transportation projects (awaiting USACE verification). NWP #14 requires that impacts to wetlands and other Waters of the U.S. cannot total more than 0.5 acre.

CDOT requires that mitigation be implemented at a 1:1 ratio for all wetlands impacted by project activities regardless of their jurisdictional status. Three potential on-site mitigation opportunities exist within the study area including: widening and reconfiguration of the drainage ditch associated with Wetland 1, establishing shrub species at a CDOW-maintained pond, and potential extension of wetlands associated with the Ligrani Drain. Reconfiguration of Wetland 1 may be the preferred site as it would be a better functional in-kind replacement for impacts to Wetlands 3 and 4. The potential for mitigation at these sites would require cooperation from either CDOW or the controlling authority of the Ligrani Drain. It may also be necessary to establish any potential impacts to established water rights associated with these drainages. Potential mitigation sites are more fully discussed in the Wetland Finding in Appendix D.

3.13 VEGETATION AND NOXIOUS WEEDS

A noxious weed survey was conducted in fall 2006, and a vegetation 'windshield survey' was taken in spring 2007 for areas within right-of-way and adjacent to the study corridor. Since the survey was conducted late in the season, the number of species and coverage of weeds may be under-reported.

3.13.1 Vegetation Existing Conditions

The study corridor is located in the Colorado Plateau Ecoregion, and the Shale Deserts and Sedimentary Basins sub-ecoregions. Since the study corridor travels through established urban residential and commercial areas, the primary vegetation includes street trees, parking lot landscaping, and open areas of ornamental turf or native grass.

In the western section of the study corridor, ornamental shrub beds, turf grasses, and street trees are specific to each business with new businesses having more comprehensive landscaping than older properties. Business front landscaping includes irrigated turf grasses, ash, crabapple, honey locust, and Austrian pine (approximately 10 to 15 feet tall) and clusters of ornamental shrubs planted to screen parking lots, fences or building foundations. At the North Avenue interchange, native grasses dominate the open medians between interchange ramps, highway, and the overpass. Typical vegetation associated with the interchanges and highway right-of-way includes saltgrass, alien kochia, and windmill grass. The 1st Street and Grand Avenue intersection has ornamental trees and shrubs within the intersection's landscaped islands, while the connecting streets have clustered shrub arrangements, street trees, and parking lot shrubs. Ute and Pitkin Avenues have the largest number of mature street trees along the street edges and the edges of two city parks, Whitman and Emerson. Both parks provide large shade trees, groups of ornamental shrubs and perennial beds, and open lawn areas. Typical street tree and park landscape species include honey locust, crabapple, Austrian pine, Colorado blue spruce, green ash, and American elm.

Landscaping in western section of I-70B

Open medians and native grasses at the North Avenue/I-70B interchange

Landscaped island at 1st Street and Grand Avenue intersection

3.13.2 Vegetation Impacts

3.13.2.1 No Action Alternative

The No Action Alternative would not involve any changes to the study corridor and thus would not effect existing vegetation.

3.13.2.2 Preferred Alternative

The Preferred Alternative would widen existing I-70B through highly developed commercial areas, including business fronts with ornamental landscaping, street medians, landscaped islands, and tree lawns with established trees and shrubs, and a city park with mature shade trees and lawn. However, the majority of the proposed improvements are within the existing roadway right-of-way with approximately 2.4 acres of new right-of-way required for the Preferred Alternative (see Section 3.7). Based on aerial photo interpretation and windshield and field surveys, it is estimated that approximately 62 trees, most within current CDOT right-of-way, would be impacted by the proposed improvements: 49 trees of various species within the 4 block retail dis-

trict between 24 Road and Rimrock Avenue, 11 honey locust and other shade trees within the 1st Street and Grand Avenue intersection area, and 2 mature American elm and honey locust trees adjacent to Whitman Park. Small areas of native grass would be impacted in the North Avenue interchange area where on-ramps and sidewalks would be improved. Two landscaped islands at the 1st Street and Grand Avenue intersection would be removed (see Section 3.14).

Because the I-70B corridor is primarily an urban area, there are not likely to be indirect affects to vegetation.

3.13.3 Vegetation Mitigation

All CDOT revegetation BMPs and guidelines will be followed to ensure adequate revegetation of the study corridor. All disturbed areas will be seeded in phases throughout construction. Although specific BMPs to be used in the study corridor will not be determined until final design, mitigation measures will include:

- Minimize the amount of disturbance and limit the amount of time that disturbed areas are allowed to be non-vegetated.
- Implement an Integrated Weed Management Plan for the project.
- Avoid disturbance to existing trees, shrubs and vegetation, and areas with a minor weed cover to the maximum extent possible.
- Implement temporary and permanent erosion control measures to limit erosion and soil loss. Erosion control blankets will be used on steep, newly seeded slopes to control erosion and to promote the establishment of vegetation. Slopes will be roughened at all times and concrete washout contained.
- Time tree removal for outside nesting season per the Migratory Bird Treaty Act (MBTA).
- Revegetate all disturbed areas with native grass and forb species. Seed, mulch, and mulch tackifier will be applied in phases throughout construction.
- Replace removed trees, shrubs and vegetation on a 1:1 basis.

Replacement vegetation will be maintained by the City of Grand Junction through agreement and per Colorado revised Statute 43-2-135 regarding division of authority over streets.

3.13.4 Noxious Weeds Existing Conditions

Noxious weeds are invasive, non-native plants introduced to Colorado by accident or which spread after being planted for another purpose, that result in lands with decreased economic and environmental value. The Colorado Noxious Weed Act (35-5.5-101 through 119, C.R.S.) recognizes that, "certain undesirable plants constitute a present threat to the continued economic and environmental value of the lands of the state and if present in any area of the state must be managed." The legislation places all public and private lands in Colorado under the jurisdiction of local governments to manage noxious weeds. According to the Act, a noxious weed meets one or more of the following criteria:

- Aggressively invades or is detrimental to economic crops of native plant communities.
- Is poisonous to livestock.
- Is a carrier of detrimental insects, diseases, or parasites.
- Has direct or indirect effects that are detrimental to the environmentally sound management of natural or agricultural ecosystems.

Under the Noxious Weed Act, the State of Colorado Noxious Weed lists are categorized by control priority:

- ***High Priority (List A):*** *Rare noxious weeds and all County noxious weeds in dispersal conduits. High priority species are targeted for eradication or suppression.*
- ***Medium Priority (List B):*** *Well established noxious weeds with discrete statewide distributions. Implement state noxious weed management plans to stop the continued spread of these species.*
- ***Low Priority (List C):*** *Extensive, well-established infestations for which control is recommended but not required.*

Plumeless Thistle

It is the duty of all persons to use integrated methods to manage noxious weeds if the weeds are likely to be materially damaging to the land of neighboring land owners. In addition to the State noxious weeds list, Mesa County has published a list of Noxious Weed Species, and CDOT maintains a Statewide Maintenance list.

A noxious weed survey of the study corridor was conducted on August 31 and September 1, 2006.

No noxious weed species from the State of Colorado high priority list (List A) were noted in the study corridor during noxious weed surveys. Noxious weed species from the State medium priority list (List B), low priority list (List C), Mesa County list, and CDOT's Maintenance list were observed in the study corridor during the surveys. These noxious weed species are listed in **Table 3-21**. The most prevalent noxious weeds of the study corridor are field bindweed and puncturevine.

3.13.5 Noxious Weed Impacts

3.13.5.1 No Action Alternative

The No Action Alternative would not involve any changes to the study corridor, thus would not remove vegetation and make additional areas available to the spread of noxious weeds.

3.13.5.2 Preferred Alternative

The Preferred Alternative would widen existing roads through highly developed urban land uses with established landscaping and few vacant lots. There would be only a few areas vulnerable to additional noxious weed invasion. The potential spread of noxious weeds caused by construction of the Preferred Alternative would have no impact to wildlife habitat or agricultural areas because no land suitable for such use occurs within one mile of the study corridor.

3.13.6 Noxious Weed Mitigation

Since soil disturbance with accompanying invasion by noxious weed species can be associated with highway construction, an Integrated Noxious Weed Management Plan in accordance with CDOT guidelines will be prepared during final design for review by CDOT. This plan will be incorporated into the project design and implemented during construction. Specific BMPs will be required during construction to reduce the potential for introduction and spread of noxious weed species, as follows:

- Noxious weed surveys will be performed by a qualified weed specialist.
- Mapping will be included in the construction documents along with appropriate control methods for noxious weeds.
- Highway right-of-way areas will periodically be inspected by a weed specialist during construction and during post-construction weed monitoring for invasion of noxious weeds.

Table 3-21 Noxious Weed Species Present

Common Name	Scientific Name	Colorado Noxious Weed List*	Mesa County Weed List**	CDOT Weed List ***
Chicory	*Cichorium intybus*	C		
Downy brome	*Bromus tectorum*	C		
Field bindweed	*Convolvulus arvensis*	C		X
Halogeton	*Halogeton glomeratus*	C		
Plumeless thistle	*Carduus acanthoides*	B	X	X
Puncturevine	*Tribulus terrestris*	C	X	
Redstem filaree	*Erodium cicutarium*	B		
Russian knapweed	*Acroptilon repens*	B	X	X
Russian-olive	*Elaeagnus angustifolia*	B		X
Tamarisk / Salt cedar	*Tamarix spp.*	B	X	X

**Colorado Dept. of Agriculture Noxious Weed Management Program Web site, Colorado Noxious Weed list, 5/30/06.*
***http://www.mesacounty.us/pest/default.aspx.*
****From CDOT Integrated Noxious Weed Management Plan*

- Weed management measures will include removal of heavily infested topsoil, chemical treatment of lightly infested topsoil, limiting disturbance areas, phased seeding with native species throughout the project, monitoring during and after construction, and other chemical and/or mechanical treatments.
- Use of herbicides will include selection of appropriate herbicides and timing of herbicide spraying.
- All areas disturbed by construction activities but not planned for ornamental landscaping will be revegetated with an appropriate certified weed-free native seed mix appropriate for soils.
- Contractor will prevent the spread of noxious weeds that could be picked up by construction equipment. All equipment will be cleaned before off-loading at the project site. Project staging areas will be mowed and cleared of noxious weeds prior to construction.
- Project design and construction engineer will coordinate with the Mesa County weed supervisor, local governing bodies, and landowners to assure proper noxious weed management activities.
- Certified weed-free hay and/or mulch will be used in all revegetated areas.
- Fertilizers will be allowed in ornamental landscape areas by project engineer approval, only.
- Supplemental weed control measures may be added during design and construction planning.
- The removal of vegetation will be scheduled to avoid the breeding season of birds from April 1 to August 31.

3.14 VISUAL QUALITY

3.14.1 Existing Visual Resources

I-70B is the original state highway route through Grand Junction. The study corridor's western boundary begins at 24 Road at the western edge of Grand Junction's I-70B retail corridor. The eastern boundary ends at the southeast edge of Grand Junction's old downtown residential district (15th Street).

Visual qualities of the I-70B West study corridor are defined by the land uses along this interstate business route. Land use characteristics along the study corridor differ greatly and vary with building architecture, density, size, and age.

3.14.1.1 Regional Visual Environment

The City of Grand Junction stands on the riverbank terrace north of the Colorado River, within the Grand Valley and near the confluence of the Colorado and Gunnison Rivers. The Colorado River flows from east to west through Grand Junction. The Book Cliffs, Grand Mesa, Colorado National Monument, and Orchard Mesa provide vivid landform boundaries to the Grand Valley. Key landscape components of the Valley's regional visual environment are its broad flat river valley, the rock cliffs of surrounding mesas, the high desert dry grasslands of the valley floor, and the ribbons of riparian vegetation lining the Colorado and Gunnison Rivers.

Preventative Control Measures for controlling noxious weeds are:

- ***Native Plants:*** *Use of native species in revegetation sites.*
- ***Weed Free Forage Act:*** *Materials used for the project will be inspected and regulated under the Weed Free Forage Act, Title 35, Article 27.5, CRS.*
- ***Topsoil Management:*** *When salvaging topsoil from on-site construction locations, the potential for spread of noxious weeds shall be considered. Importing topsoil onto the project site shall not be allowed.*
- ***Equipment Management:*** *Equipment will remain on designated roadways and stay out of weed-infested areas until the areas are treated. All equipment will be cleaned of all soil and vegetative plant parts prior to arriving on or leaving the project site.*

3.14.1.2 Project Viewsheds

The I-70B viewshed includes surface areas visible from I-70B as a series of viewpoints seen by traveling motorists. Foreground views are dominated by the street pavement and road elements, landscaping, sidewalks, businesses and their parking lots, homes, and other man-made urban elements. Urban development in the middle ground is screened by the foreground structures. Background views to the distant mesa cliffs can be seen occasionally between buildings and at the end of long, straight sections of road.

Because the study corridor is topographically flat, and urban development dominates foreground views for interstate motorists, views to the mesas are not consistently visible from I-70B. Occasional views to the mesas can be seen between buildings along the street frontage, or at the end of long, straight street sections pointed toward the landscape feature.

Important views to local Grand Junction landmarks and historic properties include the following:

- Elks Lodge
- Railroad Depot
- Whitman and Emerson Schools
- Museum of Western Colorado
- Grand Junction Two Rivers Conference Center
- Historic Railroad Depot
- Whitman and Emerson Parks

3.14.1.3 Project Landscape Units

Visual resources of the study corridor are organized into four landscape units for the purpose of analyzing the project effects on visual quality. The landscape units are defined by the character of urban elements dominating foreground views. There are four landscape units: New Retail West, North Avenue Interchange, Grand Avenue Intersection, and Ute/Pitkin Couplet East (see **Figure 3-21**).

Important views are distinct to the Grand Valley's visual environment and add to the Valley's scenic integrity. They include the following regional landmarks:

- ***Orchard Mesa:*** *A smaller scale mesa situated above the Colorado River to the South.*
- ***Colorado National Monument:*** *A dominant background feature providing a visual edge to the Grand Valley to the West.*
- ***Bookcliffs:*** *A large geologic mountain formation to the North.*
- ***Grand Mesa:*** *A large background land feature of Grand Valley to the Northeast.*

Figure 3-21 Visual Resource Landscape Units

3.14.2 Existing Visual Quality

3.14.2.1 New Retail West

The New Retail West landscape unit begins at 24 Road and ends at the west edge of the I-70B and North Avenue interchange. Urban land use patterns include relatively newer strip commercial centers, Mesa Mall, big box retail and smaller, older independent commercial and industrial businesses. The new Riverside Parkway intersects with I-70B at 25 Road. Frontage roads and multiple curb cuts provide access to these businesses.

The overall visual character for the area is an old industrial business area transitioning to new retail commercial businesses: big box retail centers and auto-oriented commercial businesses. Frontage roads edge three of the four blocks of this unit. Landscaping and street trees are specific to each business. New developments have irrigated landscaping to screen parking lots; older business and street medians do not. Most of this western portion has above-ground power poles and street lights of mixed types and materials.

The New Retail West landscape unit lacks visual unity, intactness, and vividness. The diversity of adjacent buildings, highway elements, parking lots, and frontage roads present a disjointed and disorderly foreground view to motorists. Overall the visual quality of this unit is low.

24½ Road and I-70B

I-70B near Riverside Parkway

3.14.2.2 North Avenue Interchange

The North Avenue Interchange landscape unit has its own distinct visual character, different from the urban street character of units to the east and west.

Because of large grassy open medians, un-curbed road pavement, one-way ramps and the flyover ramp, this unit has the distinct image of a traditional highway interchange. Land uses are set back from the road right-of-way. Unobstructed views of the surrounding mesas can be seen from the flyover ramp. I-70B makes an alignment shift at this point, from an east-west orientation to northwest-southeast. There are no pedestrian sidewalks, street trees, or bicycle facilities. The highway character seems out of place among the city street character of adjacent landscape units.

The North Avenue interchange landscape unit has a moderate level of visual unity and intactness due to the repetition of highway elements without influence of adjacent urban land uses. Its "place-making quality" and vividness is low.

North Avenue and I-70B Interchange

3.14.2.3 Grand Avenue Intersection

The Grand Avenue Intersection landscape unit begins at the south end of the North Avenue Interchange and ends where the corridor turns east, at Ute and Piktin Avenues. Land uses are of mixed types and age and are more compressed, especially surrounding 1st Street and Grand Avenue intersection. The adjacent land patterns and buildings are not unified in their arrangement, architecture, or street front image. Adjacent businesses primarily serve motorists, but there are also some warehouse stores and small retailers. The islands of the 1st Street and Grand Avenue intersection are landscaped with mature trees and irrigated turf. Another large area has been converted to a Xeriscape landscape demonstration project prepared by the City of Grand Junction and the Colorado State University Extension Service. Other elements within the motorists' foreground view include light standards, power lines, and highway and business signs on both sides of the highway.

Landscaped Island:
1st Street and Grand Avenue

Xeriscaped Demonstration Garden:
1st Street and Grand Avenue

South of Grand Avenue to Ute Avenue, the landscape unit changes in visual character. Commercial buildings are well-established and typically two stories in height. Businesses are close to I-70B and separated only by a sidewalk and small landscaped parkways that line the edges of the street.

Locally important views to the historic railroad depot and the Two Rivers Convention Center can be seen in the middle ground from I-70B. A decorative concrete barrier separates the outside curve of I-70B from the parking lot in front of the railroad depot. Because of building heights and mature street trees that line much of the roadway, regionally important views of the mesas are limited.

1st Street and Main Street

Railroad Depot

Visual quality in the Grand Avenue Intersection landscape unit is of low to moderate value. Like the new retail west section, the diversity of building types with their current condition and architectural style, and the inconsistent street tree and street element pattern, present a disorderly and disjointed foreground view to

motorists. Views to local and regional landmarks are not memorable; therefore, vividness qualities are low.

3.14.2.4 Ute and Pitkin Couplet East

The Ute and Pitkin Couplet East landscape unit includes older city blocks between 1st and 15th Streets, along the one-way couplet of Ute and Pitkin Avenues. Traffic travels east and west on these one-way three-laned streets with no on-street parking. The overall land use pattern for this landscape unit is mixed use: small single-family homes and small single-story commercial business with light industrial and light manufacturing land uses. This landscape unit is distinctive for its turn-of-the-century land use pattern, mature trees, and older buildings and parks, but this 'old town' image has become disjointed with the addition of a new convention center, auto service stores, and industrial buildings.

The visual character along Ute Avenue consists of mostly two-story brick homes with lawns and mature street trees. Landscaping in this area is well-maintained to 8th Street. East of 8th Street, portions of the roadway landscape areas are bare and weedy. Land uses become more industrial and auto-service oriented with many automotive repair parts stores. Street trees are sparse east of 11th Street.

Along Pitkin Avenue, from 2nd Street east to 15th Street, the visual environment is similar to Ute Avenue. Land uses consist of a mix of commercial and single-family residential units. Sidewalks extend throughout this portion of the corridor, but landscaping is often sparse and sometimes includes bare ground. Mature trees are plentiful east to about 5th Street, but are minimal throughout the remainder of the landscape unit.

Two established neighborhood parks are located between Ute and Pitkin Avenues. They are Whitman Park (between 4th Street and 5th Street) and Emerson Park (between 9th and 10th Streets). The parks are filled with mature shade trees and groomed lawn areas with public facilities.

Distant views of the mesas are largely obscured to motorists. Mesa views are better seen from the eastern end of this unit where urban development and tree cover is less dense.

The visual quality of the Ute and Pitkin Couplet East landscape unit is of moderate value. The consistent street tree and building patterns, along with good views toward local historic landmarks, strengthen the vividness and unity of this unit and makes the corridor memorable for its sense of Grand Junction town history. But the inconsistent residential and commercial land use character and neglected appearance weaken the visual intactness of the area.

Whitman Park:
Pitkin Avenue and 4th Street

Ute Avenue and 10th Street

3.14.3 Visual Resources impacts

3.14.3.1 No Action Alternative

There would be no visual impacts under the No Action Alternative.

3.14.3.2 Preferred Alternative

The Preferred Alternative roadway improvements would change three of the four landscape units, but have the potential to improve visual quality by unifying roadway elements and reducing visual confusion.

New Retail West

The proposed improvements would reduce curb cuts and unify the access points of adjacent businesses along I-70B. Travel lanes would be increased from two to three lanes in each direction. Some landscape areas in front of businesses and parking lots would be replaced with new access roads, turning lanes, or frontage roads. It is estimated that approximately 49 street trees, their nearby shrub beds, and lawns would be impacted, most within CDOT right-of-way.

New areas for urban design amenities would be created in the larger median areas between the I-70B travel lanes and the frontage roads or access turn lanes. Planting areas for trees, shrubs, and ground cover would be available in the larger medians where motorist sight distances and other traffic safety standards can be met. The center median between the east- and westbound lanes would also be available for urban design treatments. See **Figure 3-22** and **Figure 3-23** for potential design concepts of these aesthetic treatments.

North Avenue Interchange

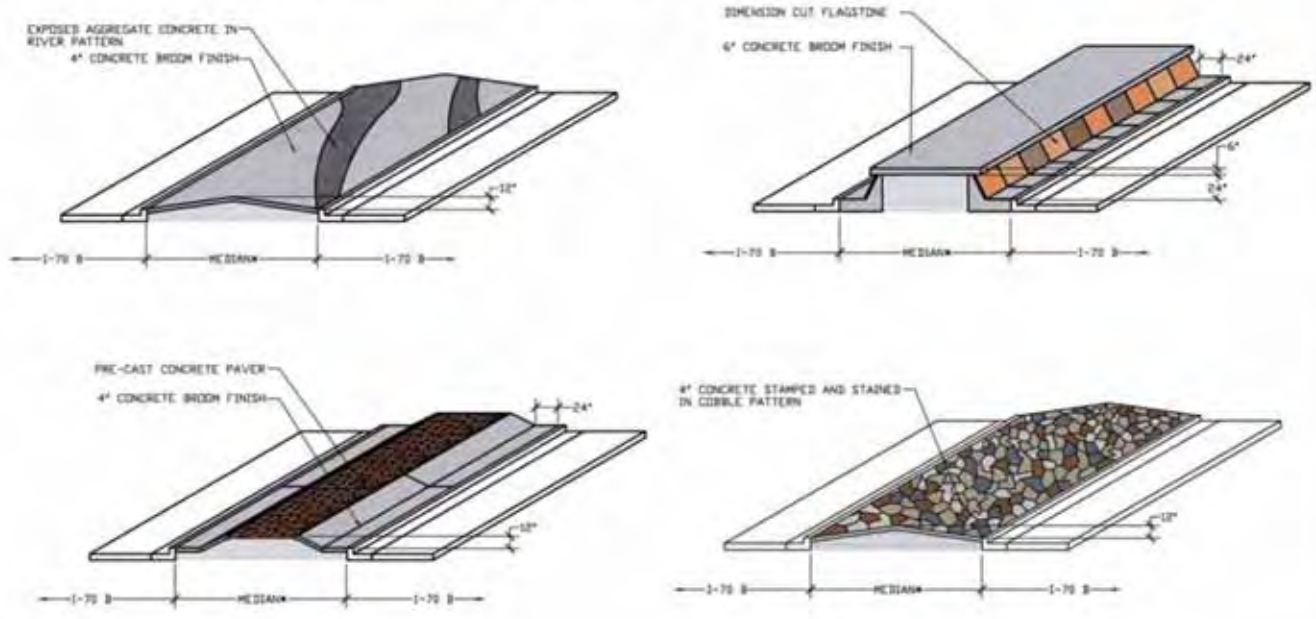
The proposed improvements for the North Avenue Interchange would not change the visual quality of this landscape unit. Relocation of the westbound on-ramp from North Avenue would be moved south toward the flyover ramp to provide room for new connections to the Highway 6 frontage road. Old pavement would be removed and seeded to match other median areas.

1st Street and Grand Avenue Intersection

Proposed improvements for I-70B include traffic and pedestrian safety improvements to the 1st Street and Grand Avenue intersection, and south along 1st Street to Ute and Pitkin Avenues. Approximately 11 trees would be removed within the landscaped island. The intersection alignment would be improved by adding landscaped medians and replacing trees and landscaping.

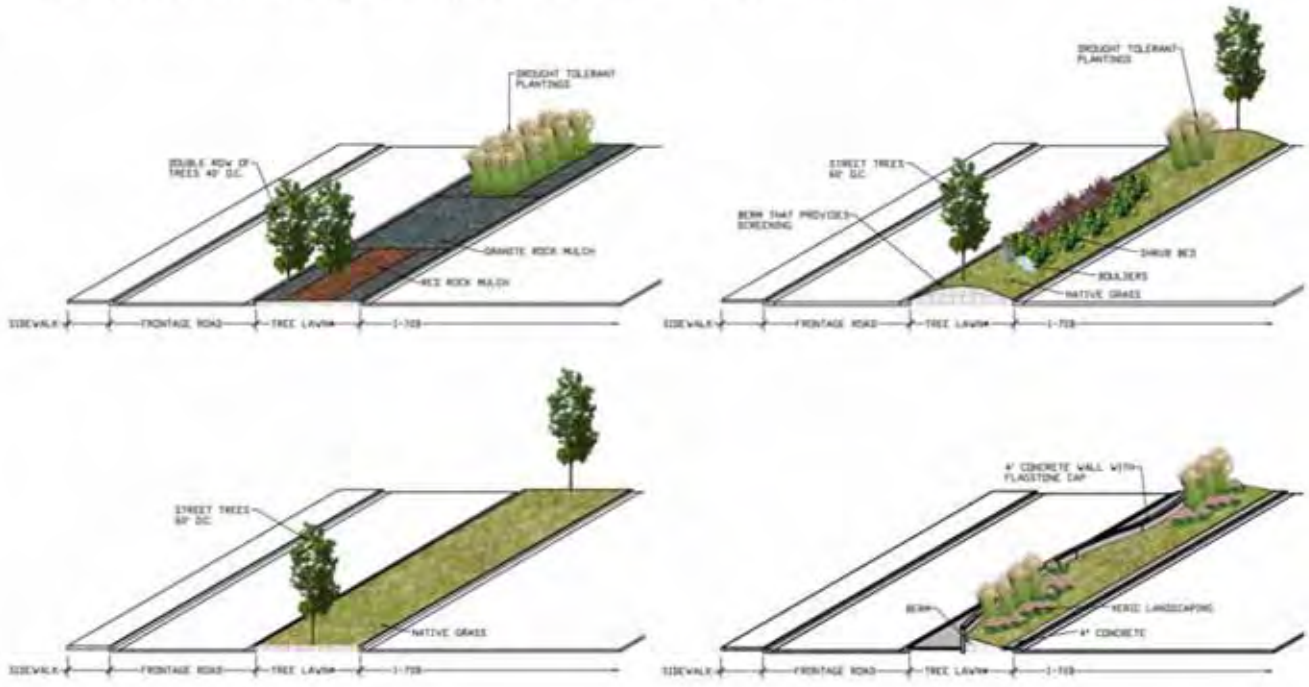
The turning radius at the corner of Ute Avenue and 1st Street would be widened to accommodate vehicle movements and improve visibility. There would be no effect to the views toward the historic railroad depot or the custom-decorated concrete barrier set along the southwest edge of the travel lanes.

Figure 3-22 Potential Design Concepts for Center Median Treatment



* WIDTH OF MEDIAN VARIES FROM 5' TO 17'

Figure 3-23 Potential Design Concepts for Side Median Treatment



*** WIDTH OF TREE LAWN VARIES FROM 7' TO 70'**

Ute and Pitkin Couplet East

Improvements to this one-way couplet are limited to the streets approaching and surrounding Whitman Park. Pitkin Avenue would be widened on the south side of Whitman Park to accommodate turning movement, requiring removal of approximately 1 mature honeylocust tree on the southwest corner within CDOT right-of-way. Highway and city directional signs and the park sidewalk would be reset. Also, one American elm tree on the northwest corner of the park, also within CDOT right-of-way, would be removed by the proposed widening of the curb radius.

3.14.4 Visual Mitigation

Existing street lights and power poles impacted by proposed improvements would be replaced with fixtures that match the newer poles and luminaries on I-70B. Design guidelines will be developed during the preliminary design phase to create uniform landscape and architectural treatments throughout the study corridor.

The addition of street landscaping and urban design amenities would help unify the motorist's view from the road, soften the increased width of roadway pavement, and reduce visual confusion. Overall, with this mitigation the visual quality of I-70B would be improved.

The removal of approximately 2 mature shade trees adjacent to Whitman Park within CDOT right-of-way would not cause a significant change in the visual quality of this park since there are over 140 trees within the park. The trees that would require removal are within CDOT right-of-way located at the northwest and southwest corners outside the park. During conceptual design, all effort was made to avoid impact to trees. Where tree removal is unavoidable, trees will be replaced with similar species in coordination with the City of Grand Junction.

3.15 HISTORIC PRESERVATION

Legislation at the state and federal levels requires that governmental agencies assess the impacts of proposed projects on historic and archaeological resources before undertaking a project. The federal legislation that protects historic and archaeological resources includes Section 106 of the National Historic Preservation Act of 1966 (NHPA as amended). Section 106 of the NHPA requires that federal agencies or other agencies that use federal funds consider the effects of their actions on historic properties. An historic property is defined as any prehistoric or historic site, district, structure, building, object, or archaeological resource included on or eligible for inclusion on the National Register of Historic Places (NRHP).

The Section 106 process includes steps to: 1) identify consulting parties; 2) define an area of potential effect; 3) identify and evaluate historic properties; 4) assess the impacts of an undertaking on the historic properties; and 5) consult with appropriate agencies for measures to avoid, minimize, or mitigate any adverse effects. The process for complying with the state legislation is similar. This section addresses the requirements of Section 106 of the NHPA and the Colorado statutes protecting historic resources. As noted in Section 3.1.4, no archaeological resources were documented in the study corridor and consequently the following information is specific to historic resources.

3.15.1 Existing Conditions

Historic resources were evaluated for the study corridor within the defined Area of Potential Effect (APE), as shown in **Figure 3-24**. CDOT consulted with the State Historic Preservation Officer (SHPO) about the APE for this project in a letter dated January 17, 2007. The SHPO provided comments on this APE in a letter dated January 29, 2007 (see **Appendix C**). In June 2007, the Grand Junction Historic Preservation Board, Museum of Western Colorado, Mountains/Plains Office of the National Trust for Historic Preservation, and Colorado Preservation, Inc. were invited to participate as consulting parties under Section 106. The Grand Junction Historic Preservation Board responded in correspondence dated July 9, 2007 (see Appendix C) and were included in the additional Section 106 consultation for the project. The Mesa County clerk and recorder was also contacted in August 2007 and was provided Section 106 materials for review.

Historic resources were evaluated for the properties within the defined APE where actual road improvements are planned to occur.

To determine if a property is eligible for inclusion on the NRHP the following criteria are used:

Criterion A: *The property is associated with events that have made a significant contribution to the broad patterns of history.*

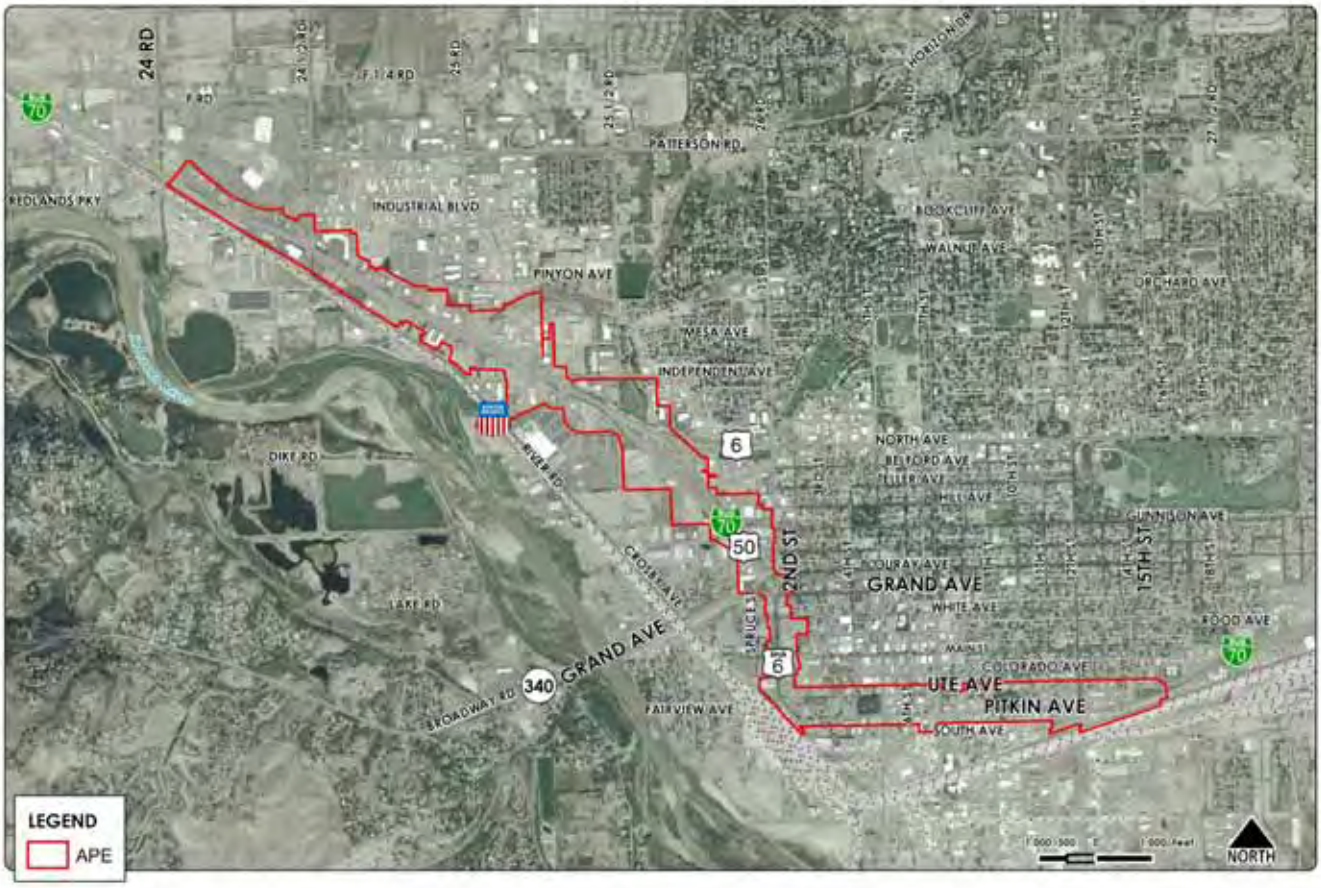
Criterion B: *The property is associated with the lives of persons significant in our past.*

Criterion C: *The property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or that possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.*

Criterion D: *The property has yielded, or may be likely to yield, information important to history or pre-history.*

If a property meets one or more of the evaluation criteria listed above, it must also be determined to have physical integrity to be eligible for the NRHP.

Figure 3-24 Area of Potential Effect



3.15.1.1 Properties Inventoried in the Area of Potential Effect

A total of 20 properties were surveyed for this project. Some previous historic survey work had been conducted in this area. The 20 surveyed properties include 2 residential properties, 15 commercial properties, and 3 institutional properties. Based on the field assessments and research conducted for this project, there are six properties that are eligible for the NRHP. These properties are listed in **Table 3-22** and shown on **Figure 3-25.**

All the other properties surveyed are not eligible for inclusion on the NRHP or the State Register of Historic Places (SRHP). Many of these properties have had significant alterations over time. Others have no known historical associations or architectural significance. The completed inventories are included in the Appendix of the Historic Resources Survey Report prepared for this project. The following briefly describes the eligible historic properties in the APE.

Table 3-22 Historic Properties in the I-70B West APE

ID Number	Address	Name/Description	Year Built	Status
5ME.4162	249 S. 4th Street	Grand Junction Elks Home	1913	Eligible for NRHP, LL
5ME.4151	248 S. 4th Street	Whitman School	1925	Eligible for NRHP, LL
5ME.15698	462 Ute Avenue	C. D. Smith Building/Museum of Western Colorado	1935	Eligible for NRHP, LL
5ME.8654	230 S. 5th Street	Rio Grande Motorway Terminal	1937	Eligible for NRHP
5ME.15689	124 North 1st Street	Marconi's Auto Sales	1955	Eligible for NRHP
5ME.1186	Bounded by Ute and Pitkin Avenues and 4th and 5th Streets	Whitman Park	1887	Eligible for NRHP

LL=Local landmark

Figure 3-25 Historic Properties

- **Grand Junction Elks Home, 5ME.4162**
  The Grand Junction Elks Home, B.P.O.E. 575, was considered one of the finest Elks homes in Colorado at the time is was constructed in 1913. It is a prominent example of Classical Revival architecture in Grand Junction. For this reason, this building is evaluated as eligible for inclusion on the NRHP under Criterion C. In addition, it was designated on the City Register of Historic Sites, Structures and Districts on August 16, 1995.

Grand Junction Elks Home

- **Whitman School, 5ME.4151**
  This building is significant as one of the earliest schools in Grand Junction situated on a site marked out for a school site on the original town plat. As such, it is eligible for inclusion on the NRHP under Criterion A. It is a very prominent building in Grand Junction and, as such, the City of Grand Junction designated the Whitman School on the City Register of Historic Sites, Structures and Districts on December 20, 1995.

Whitman School

- **C. D. Smith Building / Museum of Western Colorado, 5ME.15698**
  This building is significant for its association with C. D. Smith, one of the first pharmacists is Grand Junction and a prominent businessman, not only in Grand Junction but in many other communities on the western slope. The building is eligible for the NRHP under Criterion B for its association with C. D. Smith. Because of its importance, the City of Grand Junction designated this building in the City Register of Historic Sites, Structures and Districts on September 21, 1994.

C. D. Smith Building/Museum of Western Colorado

- **Rio Grande Motorway Terminal, 5ME.8654**
  This building is significant for its role in supporting transportation to and from Grand Junction. From its completion in 1937, this building has always served as a regional bus station. It continues in that role some 70 years later. For these reasons it is eligible to the NRHP under Criterion A.

Rio Grande Motorway Terminal Home

- **Marconi's Auto Sales, 5ME.15689**
  This property is significant for its association with the development of transportation along the old main highway in Grand Junction. The building is a utilitarian auto-related commercial structure similar to many others built in Colorado in the mid-20th century. The building was originally constructed as a gas station and was remodeled to serve as a car sales business. The original gas pumps have been removed. For these reasons, it is eligible for the NRHP under Criterion A.

Marconi's Auto Sales

- **Whitman Park, 5ME.1186**
  This park is significant because it was shown on the original town plat. It was developed several years later, and after more than 125 years, it is still the same size and the same park use, in the same location as it was when originally planned. This park is eligible for inclusion on the NRHP under Criterion A.

Whitman Park

3.15.2 Effects to Historic Properties

3.15.2.1 No Action Alternative

There would be no impacts to historic properties.

3.15.2.2 Preferred Alternative

The Preferred Alternative would require acquisition of less than 100 square feet (.0023 acre) of land from the northwest and southwest corners of Whitman Park for proposed radii improvements (see **Figure 3-26**). Design lines shown in the northeast and southeast corners of the park in **Figure 3-26** are where sidewalk improvements tie into the existing park sidewalk and are not impacts. Whitman Park is 2.48 acres in size so this reduction of .0023 acre amounts to a reduction of less than 0.1% of the total property. The Preferred Alternative would not affect those characteristics that make the park eligible to the NRHP. Therefore, the Preferred Alternative would have *no adverse effect* on Whitman Park, as determined by CDOT and concurred by SHPO in a letter dated August 22, 2007. A de minimis impact finding for section 4(f) uses of historic properties was prepared and included in Appendix E. This approach was taken in coordination with FHWA. SHPO was informed regarding the de minimis funding.

No other historic properties listed in **Table 3-22** would be directly impacted by the Preferred Alternative.

Indirect effects to historic properties from noise and visual changes were considered for this project. The noise assessment conducted for this EA showed that there would be no direct impacts from increased vibration and that the noise levels along Ute and Pitkin Avenues (where the historic properties are located) would be, at most, 1 to 2 dB(A) above the existing noise levels. No capacity improvements are planned along Ute and Pitkin Avenues. The visual characteristic would not change in this area as a result of improvements. A total of two trees would be removed at the northwest and southwest corners of Whitman Park to accommodate the turning radii. Both of the trees are very close to the roadway and within CDOT right-of-way. The removal of these two trees would not change the characteristic of Whitman Park since there are over 140 trees within the park.

Temporary increases in noise, dust and traffic would occur during construction. Noise would be generated by diesel-powered equipment, such as dump trucks and

Figure 3-26 Impacts to Historic Properties

bulldozers, back-up alarms on certain equipment, and compressors. Dust could result from construction of roadway improvements.

These impacts would have *no adverse effect* on Marconi's Auto Sales (5ME.15689) and would result in no historic properties affected for the Grand Junction Elks Home (5ME.4162), Whitman School (5ME.4151), C.D. Smith Building/Museum of Western Colorado (5ME.15698), and Rio Grande Motorway Terminal (5ME.8654) as determined by CDOT and concurred with SHPO in letters dated August 22, 2007 and October 25, 2007.

3.15.3 Summary of Coordination

The SHPO, Mesa County Clerk and Recorder, and Grand Junction Historic Preservation Board were provided an opportunity to comment on eligibility and effects for the project in August 2007. The SHPO responded in correspondence dated August 22, 2007 and concurred with the majority of the determinations. However, SHPO did request additional information regarding four eligible properties (5ME.4162, 5ME.8654, 5ME.15698, and 5ME.1186) and one non-eligible property (5ME.15689). CDOT submitted a response to SHPO's request for additional information on October 10, 2007 and received concurrence from SHPO in correspondence dated October 25, 2007. The City of Grand Junction Historic Preservation Board responded in correspondence dated September 19, 2007, and agreed with the determinations of eligibility and effect for the project. No comments from the Mesa County Clerk and Recorder were received within the 30-day review period. Copies of all correspondence are included in Appendix C.

3.15.4 Native American Consultation

Section 106 of the National Historic Preservation Act (as amended) and the Advisory Council on Historic Preservation regulations (36 CFR 800.2[c][2][ii]) mandate that federal agencies coordinate with interested Native American tribes in the planning process for federal

undertakings. Consultation with Native American tribes recognizes the government-to-government relationship between the United States government and sovereign tribal groups. In that context, federal agencies must acknowledge that historic properties of religious and cultural significance to one or more tribes may be located on ancestral, aboriginal, or ceded lands beyond modern reservation boundaries.

Consulting tribes are offered the opportunity to identify concerns about cultural resources and comment on how the project might affect them. If it is found that the project will impact properties that are eligible for inclusion on the National Register of Historic Places and are of religious or cultural significance to one or more consulting tribes, their role in the consultation process may also include participation in resolving how best to avoid, minimize, or mitigate those impacts. By describing the proposed undertaking and the nature of any known cultural sites, and consulting with the interested Native American community, FHWA and CDOT strive to effectively protect areas important to American Indian people.

In April 2007, FHWA contacted four federally recognized tribes with an established interest in Mesa County, Colorado, and invited them to participate as consulting parties:

- Southern Ute Indian Tribe
- Ute Mountain Ute Tribe
- Ute Tribe of the Uintah and Ouray Agency ("Northern" Ute)
- Hopi Tribe

Only the Hopi Tribe responded in writing to the solicitation, declining the invitation to consult (see Appendix C). None of the remaining tribes elected to reply. As a result of these actions, FHWA has fulfilled its legal obligations for tribal consultation under federal law.

3.15.5 Historic Preservation Mitigation

Because a no adverse effect finding for Whitman Park was determined with SHPO concurrence, no mitigation is necessary. A de minimis Section 4(f) impact finding was prepared and is included as part of the Programmatic 4(f) Evaluation for use of Parkland (see Appendix E).Construction noise impacts, while temporary, would be mitigated by requiring the contractor to use well-maintained equipment (particularly mufflers) to the extent feasible. See Section 3.18.3, for additional mitigation measures during construction.

3.16 PARKS AND RECREATION

3.16.1 Existing Conditions

3.16.1.1 Parks

The City of Grand Junction has a well-developed park system with approximately 35 public parks (including regional, community, neighborhood, and mini parks) and recreation areas. These total over 670 acres, with 252 acres currently developed and approximately 419 acres of land committed to park development but as yet undeveloped. However, an inventory of existing parks and recreational resources by Grand Junction indicated a shortage of parkland for the population. Development of new parks and recreation facilities is considered a high priority by the City of Grand Junction and area residents.

According to the *Grand Junction Parks Master Plan* (February 2001) five properties identified as parks and one state wildlife area are located in the study corridor (see **Figure 3-27** and **Table 3-23**). However, two of these parks (Lilac and Colorado West) and parts of Desert Vista are landscaped areas within the CDOT right-of-way and are not zoned or considered official publicly-owned parks in land use plans. There are two official neighborhood parks owned by the City of Grand Junction: Whitman and Emerson. The Westlake State Wildlife Area is owned by the Colorado Division of Wildlife.

In addition, the eastern part of the study corridor is served by two large regional/community parks that are located outside the study corridor: Lincoln Park and Las Colonias Park.

Figure 3-27 Existing Parks and Recreation Areas

Source: Grand Junction Master Plan (February 2001)

Table 3-23 Existing Parks and Recreation Areas

Park/Recreation Area	Size (acres)	Classification	Amenities	Ownership/ Management
Westlake State Wildlife Area	2.0	State wildlife area.	Warmwater lake fishing, birdwatching, and restrooms. No hunting or boating is allowed.	Colorado Division of Wildlife
Whitman Park	2.48*	Neighborhood park.	Open space and restrooms (scheduled for future improvements, such as shelters, play equipment, landscaping walks, handicapped access, etc.)	City of Grand Junction
Emerson Park	2.48*	Neighborhood park.	Open space, picnic tables, playground equipment, restrooms (scheduled for future improvements, such as shelters, play equipment, landscaping walks, handicapped access, etc.)	City of Grand Junction
Desert Vista Park**	0.4		Open space.	City of Grand Junction

Source: City of Grand Junction Parks & Recreation Web site and City of Grand Junction Parks Master Plan, February 2001.

**Note: Acreage based on original platted dimensions.*

*** Portions of this park are located within CDOT right-of-way.*

3.16.1.2 Recreation Trails

No off-street recreational trails are located along I-70B; however, trails cross I-70B at several locations. There is an off-street sidewalk located along the south side of I-70B between Bogart Lane and Rimrock Avenue, and between Rimrock Avenue and 25 ½ Road. Sidewalks are sparse and discontinuous throughout much of the study corridor. (See Section 3.6, Bicycle and Pedestrian Facilities, for more information on existing sidewalks and bicycle facilities.)

3.16.1.3 Planned Parks and Recreation Resources

According to the 2001 Urban Trails Master Plan map, numerous bicycle and pedestrian facilities are planned in the City of Grand Junction. Planned facilities that fall within the study corridor are discussed in Section 3.6, Bicycle and Pedestrian Facilities. No new parks are planned in the study corridor; however, improvements to Whitman Park and Emerson Park are planned (see **Table 3-23**).

3.16.2 Parks and Recreation Impacts

3.16.2.1 No Action Alternative

The No Action Alternative involves no additional construction beyond those projects currently programmed, approved, and funded. Therefore, the No Action Alternative would not result in additional impacts to parks and recreation facilities within the study corridor.

3.16.2.2 Preferred Alternative

The Preferred Alternative would result in less than 100 square feet of impact to Whitman Park. This represents approximately 0.1% of the total park area. During the preliminary design process every effort was made to avoid impacts to Whitman Park. Impacts do not impair the use of the remaining park land, in whole or in part, for its intended purpose.

The Preferred Alternative would have no impacts to the Westlake State Wildlife Area, Emerson Park or Desert Vista Park.

3.16.3 Parks and Recreation Mitigation

No mitigation is required. Sidewalks will be reconstructed at all four corners of Whitman Park (See **Appendix E**, Section 4(f) Programmatic Evaluation).

3.17 HAZARDOUS MATERIALS

Hazardous materials may be encountered in the study corridor during the construction of a transportation project. Therefore, it is important to identify properties that may contain contamination prior to right-of-way acquisition and construction. Hazardous material is defined as any waste product that is considered flammable, corrosive, reactive, or toxic. Hazardous material can be found in various forms and can originate from a variety of sources. Examples of potential sites that may contain hazardous material include landfills, service stations, industrial areas, railroad corridors, and mine sites. When developing a transportation project, it is important to be aware of known hazardous material sites so they can be avoided or their impacts minimized.

The standard process for assessing the potential for encountering hazardous material prior to right-of-way acquisition and construction is a two-phase approach. Phase One involves the completion of an Initial Site Assessment (ISA) that generally provides background information on sites that may contain hazardous material. A Modified Phase I Environmental Site Assessment (MESA) is a frequently conducted version of an ISA. The second phase is a Phase II Environmental Site Assessment (ESA) that typically includes a subsurface investigation and analytical testing of soil and/or groundwater to further assess the type and extent of contamination that may be present. The need for conducting a Phase II ESA is based on the outcome of the ISA or MESA.

Carter & Burgess completed a MESA in July 2007 to evaluate the potential for encountering soil and/or groundwater contamination in the study corridor. The MESA is based on information obtained from a review of environmental regulatory records, historical Sanborn Fire Insurance maps, and an on-site inspection.

3.17.1 Existing Conditions

Land use within the study corridor has historically been a mixture of residential, commercial, industrial, and transportation. In July 2007, a MESA was completed for an approximate one-mile radius from the center line of the study corridor. **Figure 3-28** shows potential sites within the I-70B West Study Corridor.

Review of the environmental regulatory records database revealed a total of 163 sites with potential environmental

Figure 3-28 Potential Hazardous Material Sites

contamination within the I-70B West MESA boundaries. An additional 117 "orphan" sites with potential environmental issues were identified but could not be located by Environmental Data Resources (EDR). Information on all of these sites can be found in the *I-70B West MESA*, 2007.

Review of the Sanborn Fire Insurance Maps for the years 1926, 1947, and 1961 revealed a total of 25 sites, of which 16 were old service stations located on the proposed alignment of I-70B in the downtown section of Grand Junction. Sanborn Fire Insurance Maps were not available or showed no development outside of downtown Grand Junction. **Figure 3-28** shows the locations of underground storage tanks (USTs) from the Sanborn Fire Insurance Maps.

After evaluating the degree of potential hazard presented by each of the database sites and Sanborn sites to the study corridor, the list of sites of concern was reduced to 4 database sites and 16 Sanborn sites that are considered recognized environmental conditions that have potential to impact the project (see **Figure 3-28**). All of the orphan sites are either several blocks removed from the proposed I-70B West alignment or are located at the same address as some of the locations identified in the database search. Of all of the listed database sites in the study corridor, four sites numbers — 15, 50, 57, 58 — listed as recognized environmental conditions located on the proposed I-70B West alignment are considered likely to impact the project. The remaining sites are a block or more from the alignment, and it is unlikely that contamination originating from these locations would impact the project unless deep excavations were planned. Nine of the 25 Sanborn sites are located a block or more from the proposed alignment and the 16 remaining sites are former service stations located on the proposed alignment, including a site on the northisde of I-70B and east of 25 Road.

The term "recognized environmental conditions" means the presence or likely presence of hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a mate-

rial threat of a release into structures on the property or into the ground, groundwater or surface water of the property. The term is not intended to include *de minimis* conditions that generally do not present a material risk or harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Only EDR-mapped sites with an OPEN status or some type of regulatory violation indicating a release are considered sites of concern. Other EDR listed sites were eliminated because they were not considered recognized environmental conditions likely to impact the project. Sites shown on Sanborn Fire Insurance Maps as having USTs are considered sites of concern because the tanks were in use before there were requirements in place for registration or removal of USTs. Also, in the past, it was common practice to place USTs under the street in front of businesses.

The U.S. Department of Energy (DOE) has investigated the presence of uranium mill tailings beneath roadways in the Grand Junction area. Numerous streets in downtown Grand Junction are known to be partially underlain by mill tailings. Further research of the DOE reports should be conducted prior to excavation below the current pavement surface.

3.17.2 Hazardous Materials Impacts

3.17.2.1 No Action Alternative

The No Action Alternative would have no effect on known hazardous material sites.

3.17.2.2 Preferred Alternative

Planned improvements to I-70B would require pavement removal and repaving in areas where underground recognized environmental conditions are known to exist. It is unlikely that shallow excavation required for repaving and minor utility relocations would encounter soil or groundwater contamination associated with USTs; however, it is important to be aware that these conditions exist in the study corridor. Also, given the Preferred Alternative would involve only shallow depths of excavation and repaving, it is not expected to release any contamination or cause major erosion control problems that might impact waterbodies in the study corridor. **Figure 3-28** shows UST and leaking underground storage tanks (LUST) sites located on the I-70B alignment. The southwest, southeast, and northeast quadrants of the intersection of 1st Street and Grand Avenue and the southwest quadrant of the intersection of Pitkin Avenue and 5th Street are former or existing gas station sites that would be impacted by the Preferred Alternative. Additionally, there is a property with fuel storage tanks on the north side of I-70B approximately 600 feet east of 25 Road that would be impacted.

The project may require removal or rerouting of utilities. Transite™ asbestos pipe or conduit was widely used for electric lines, telephone lines, water lines, and more recently, for fiber-optic cable. It is possible that transite™ pipe could be encountered during pavement removal and repaving operations. Construction contractors should be trained to recognize this type of material prior to the start of construction.

Mill tailings from the former Climax Corporation uranium mill are known to be present beneath some of the city streets in Grand Junction. Several reports are available that show the location of mill tailings in the downtown area of Grand Junction. Construction plans should be compared with mill tailings reports in order to evaluate the likelihood of encountering mill tailings during construction.

3.17.3 Hazardous Materials Mitigation

The potential risks associated with hazardous materials on construction projects are carefully considered. For instance, Section 250 "Environmental Health and Safety Management" of the *Standard Specifications for Road and Bridge Construction* (CDOT, 2005) provides for the protection of the environment, persons, and property from contaminants and includes special requirements for addressing hazardous material, if encountered.

Construction on the project is expected to include pavement removal, repaving, and minor utility relocation and, as a result, encountering hazardous material in soils and groundwater is not anticipated. However, there are documented USTs, LUSTs, and other recognized environmental conditions at locations along the study corridor. Precautions will be taken by construction personnel to monitor excavations for the possible presence of volatile organic compounds during any excavation that extends below the base of pavement in areas adjacent to listed UST and LUST sites. Construction personnel will

also be trained to look for and recognize asbestos containing materials in soil.

Construction debris or asbestos utility lines will be inspected by appropriate professionals and addressed in accordance with Colorado Department of Public Health and Environment (CDPHE) regulations pertaining to asbestos waste management (6CCR 1007-2, Part 1, Section 5).

Prior to excavation or removal of pavement on the project, research will be conducted to determine the location of mill tailings beneath downtown Grand Junction streets. The CDPHE Grand Junction office maintains records of uranium mill tailings activities associated with the cleaning of the old Climax Mill site.

Monitoring for uranium radiation will be conducted in areas where mill tailings are suspected to be present. If mill tailings are encountered during construction of the project, they will be handled in accordance with CDPHE and City of Grand Junction regulations for handling, transportation, and disposal of uranium mill tailings.

3.18 CONSTRUCTION

3.18.1 Roadway Construction Methods

The contractor will determine construction methods during or after development of the final design and construction plans. In general, roadway construction involves the following types of action: excavation and grading, utility adjustments, storm sewers, and pavement. The earliest that any construction activities would begin on the proposed project is the summer of 2009. Based on existing funding, this would be for a first phase only. Future phases will be dependent upon availability of future funds, which are not yet allocated.

3.18.2 General Construction Impacts

3.18.2.1 No Action Alternative

The No Action Alternative involves no additional construction over what is currently programmed, approved, and funded. Therefore, the No Action Alternative would not result in construction impacts.

3.18.2.2 Preferred Alternative

Construction of the Preferred Alternative would require construction phasing, staging areas, and detours, as well as temporary interruption of traffic along I-70B segments and intersections, and frontage roads. Construction delays are expected to create short-term impacts to local and regional traffic circulation and congestion. Delays to the traveling public and emergency service vehicles, as well as inconvenience to study corridor residents and businesses, would occur. Reduced speed limits on local streets, short-term travel on unpaved surfaces, and temporary lane closures on I-70B are to be expected during construction activities. Temporary lane closures and delays would place additional pressure on alternate routes, impact business access at a number of locations, and result in short-term economic impacts. Temporary lane closures may occur at various times throughout the day during construction. There would be the potential for nighttime closures of I-70B, in which case detour routes would be necessary. Temporary closure and detouring of sidewalks located along the corridor would be required. Construction would cause temporary and minor noise and fugitive dust impacts.

3.18.3 Construction Mitigation

Mitigation for direct impacts includes implementation of some or all of the following measures during construction:

- Develop traffic management plans.
- Keep as many lanes open as possible during peak travel times by temporarily shifting these lanes within the existing framework of the roadway.
- Coordinate detour routes to avoid overloading local streets with detour traffic, where possible.
- Maintain access to local businesses/residences.
- Coordinate with emergency service providers to minimize delays and ensure access to properties.
- Use signage, television, and radio announcements to announce and advertise timing of road closures.
- Use noise blankets on equipment.
- Reroute truck traffic away from residential areas as much as possible.
- Combine noisy operations to occur during the same period.

- Conduct high-noise activities during daytime construction where possible.
- Suppress dust through watering or dust palliative.
- Provide construction fencing to protect pedestrians and bicyclists from construction areas.
- Use signage to direct pedestrians and bicyclists to temporary sidewalk and trail detours.
- Idling times for construction equipment will be monitored to prevent excessive exhaust emissions.
- Low-sulfur fuels will be required for diesel construction equipment
- Low emissions equipment and clean engine technologies for diesel construction equipment will be evaluated prior to construction.

In addition, CDOT will require the contractor to provide public information services.

3.19 CUMULATIVE EFFECTS

The character of the I-70B West study corridor has changed significantly over time.

Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).

The environmental resources addressed under cumulative effects are those that have been identified as resources of particular concern in the study corridor that would be potentially impacted by the project. The cumulative effects analysis addresses the "incremental impacts" of the proposed action related to those resources.

The following local, state, and federal agencies were contacted to identify cumulative issues they consider to be of concern in relation to the I-70B West project:

- U.S. Environmental Protection Agency
- U.S. Department of the Interior - Bureau of Reclamation
- U.S. Department of the Interior - National Park Service
- U.S. Army Corps of Engineers
- U.S. Department of Energy
- U.S. Fish and Wildlife Service
- Colorado Department of Public Health and Environment
- Colorado Division of Wildlife
- Colorado Department of Natural Resources
- Colorado State Parks
- Colorado Historical Society
- Colorado Riverfront Commission
- City of Grand Junction - Historic Preservation Board
- Grand Junction Parks and Recreation Department
- Grand Junction Drainage District
- Grand Valley Transit
- Mesa County

During project scoping, resource agencies were not able to identify resources of particular concern in the study corridor that would warrant a cumulative effects analysis. In other words, there are no environmental resources in the study corridor that have, over time, been deteriorated to the point that the incremental effects of the I-70B West project, in conjunction with other reasonably foreseeable future developments, would exceed the capacity of a resource within the study corridor to sustain itself or remain productive.

Although no resources of concern were identified through the scoping process, it is recognized that the character of the I-70B West study corridor has changed significantly over time. The project's contribution to this change is addressed in this section.

3.19.1 Past Conditions

Data on the historic and existing condition of the I-70B West corridor were derived from readily available data sources that included aerial photography, the *Westside Downtown Redevelopment Plan*, 2004, the *Grand Junction Growth Plan*, 1996, and the *I-70B Corridor Optimization Study*, 2004.

Historically the western portion of the study corridor was primarily agricultural with very few commercial establishments. The eastern portion consisted of single-family residences and a few commercial establishments.

A comparison of aerial photography from the years 1954, 1966, 1977, 1986, 1997, 2002, and 2006 reveals the level of change within the study corridor. In 1954, the western portion of the study corridor was primarily agricultural with very few commercial establishments along the roadway. Additional commercial development occurred following the construction of I-70B in the 1960s. I-70B was initially constructed with four lanes, closely spaced frontage roads, and frequent driveways. Between 1986 and 2002, local commercial growth was strong. During this time, the Mesa Mall was constructed, and the development of commercial and "big box" establishments intensified.

In the eastern portion of the study corridor, historical development consisted of single-family residences and a few commercial establishments. This area experienced more gradual change between 1954 and 2002, with land uses slowly transitioning from residential to retail and commercial development.

3.19.2 Existing Conditions

Today the study corridor is a major link to regional employment and commercial services for populations between Denver and Salt Lake City. The western portion of the study corridor is dominated by light industrial, small commercial, and "big box" commercial developments. As a result, the historic design of I-70B is no longer consistent with the level of development and the nature of redeveloped land that has occurred and is occurring along I-70B and the I-70B frontage roads.

Development near Ute and Pitkin Avenues is more consistent with the historic grid of the downtown area, although much of the residential development has been replaced with retail and commercial development. The transition from residential to commercial development is a trend that continues today and a change that is desired by the community as reflected in existing zoning and land use planning efforts. Both the *Westside Downtown Redevelopment Plan* and the *Grand Junction Growth Plan* envision this commercially zoned area as a downtown corridor with primarily retail and commercial development.

3.19.3 Reasonably Foreseeable Future Projects

Planned transportation and land development projects in the vicinity of the study corridor include the following:

- **Loop Road Concept:** Over the past 25 years, various traffic studies have been conducted to determine how to best address both local and regional transportation needs in the Grand Valley. When the results and recommendations of the studies are combined and evaluated, it was evident that the transportation corridors identified in the separate studies could be integrated into a loop around the downtown area. Major components of this loop road include the 29 Road Corridor, Riverside Parkway, I-70, and the 24 Road Corridor (see **Figure 3-29**).

  Because of increasing traffic and out-of-direction travel, the community endorsed the completion of the loop road. Community support is evidenced by the approval of bonds that provide funding and by positive comments made throughout the public process. Completion of the loop road would result in improvements in bicycle and pedestrian facilities and could facilitate transit services. In the west segment, through traffic would be removed from the historic, largely Hispanic Riverside neighborhood, thereby allowing the City to complete major flood control improvements along the north bank of the Colorado River. In addition to greatly reducing the risk of flooding for the Riverside Neighborhood, the City would construct a handicapped-accessible pedestrian overpass between the neighborhood and the downtown areas as part of the Riverside Parkway project.

Figure 3-29 Loop Road Concept

- **29 Road Corridor:** The 29 Road Corridor is a principal arterial that would eventually extend to I-70 from SH 50. Since 1979, 29 Road has been identified by Grand Junction as the preferred route for a north-south arterial serving eastern Grand Junction. Construction of the corridor includes eight phases, six of which have already been completed or are currently under construction. The corridor is scheduled for completion after 2010. All of the corridor segments are locally funded.
- **Riverside Parkway:** The Riverside Parkway is a new three- and five-lane urban roadway providing connections across southern Grand Junction. The Riverside Parkway was developed using context sensitive solutions (CSS) in that it was collaboratively designed, addressed community values, fits within the physical setting, addresses mobility and safety needs, and addresses historic, aesthetic, and environmental resources. Construction on Riverside Parkway began in early fall 2005 and should be complete in late 2008.
- **24 Road Corridor:** The *24 Road Corridor Plan*, 2000 details the development of approximately 1,000 acres in the vicinity of 24 Road between I-70 and the Mesa Mall at Patterson Road. The preferred plan indicates mixed uses with commercial development behind the Mesa Mall and adjacent to I-70.
- **Whitewater Plan (2007):** Whitewater is a rural community eight miles south of Grand Junction along SH 50. The purpose of the Whitewater Plan is to set guidelines for Whitewater's growth from a rural area into an urban community. The plan anticipates 7,000 households (from 450 in 2006) and a population of over 20,000 (from 1,125 in 2006) by 2030. The county is currently working to expand sanitary sewer service in order to accommodate this desired development and growth.
- **Other Planned Development:** Additional land development projects identified by the City of Grand Junction in April 2007 that are within 0.5 mile of the I-70B corridor include the following:
  - Construction of four office/warehouse complexes totaling 14,000-square-feet of light industrial/commercial uses on Indian Road. Site plan is currently being reviewed.
  - Construction of a 56,700-square-foot health club (Gold's Gym) on 6.0 acres adjacent to I-70B. Site plan is currently being reviewed.

- Construction of a 2,860-square-foot commercial establishment (Comet Cleaners) on 25 Road. Request for a conditional use permit is being reviewed.
- Development of 7.9 acres within the Rimrock Marketplace on I-70B. Request for subdivision of land is currently being reviewed.
- Construction of a 2,850-square-foot liquor store as an addition to Sam's Club on Independent Avenue. Site plan is currently being reviewed.
- Conversion of 0.358 acre of vacant land that is zoned for residential development to a parking lot. Request for a conditional use permit is being reviewed.
- Construction of three buildings totaling 11,600-square-feet that would provide housing for the homeless on 0.5 acre along White Avenue. Site plan is currently being reviewed.
- Construction of a 5,000-square-foot office/warehouse on 0.58 acre adjacent to 25 Road. Site plan is currently being reviewed.
- Construction of 119 attached townhouses and 144 condominium units on 18.27 acres within Sundance Village between F ¼ Road and 24 ½ Road. Final plan is currently being reviewed.
- Development of a 26-unit residential subdivision on 6.82 acres along E Road. Preliminary plan is currently being reviewed.
- Construction of a 17,243-square-foot building for commercial use on 2.01 acres adjacent to I- 70B. Site plan is currently being reviewed.
- Annexation of 15.17 acres of county land along D Road. Land would be zoned for light industrial uses.

3.19.4 Conclusion

As the various transportation and other land development projects are constructed, the continued transition of land uses along I-70B and adjacent to Ute and Pitkin Avenues is to be expected. This transition would result in more "big box" commercial development in the western portion of the study corridor and the further conversion of residential land use near Ute and Pitkin Avenues to primarily retail and commercial land uses. The Preferred Alternative would support commercial development in the western portion of the study corridor by increasing capacity and improving safety and mobility. The Preferred Alternative does not include any capacity changes along Ute and Pitkin Avenues and would not cause land use change in this area. However, land use plans, and the City's redevelopment program support the transition of Ute and Pitkin Avenues to development commensurate with the *Grand Junction Growth Plan* and *Westside Downtown Redevelopment Plan.*

The Preferred Alternative does not result in effects that would cause an unacceptable deterioration in community character.

Land use within the I-70B study corridor has changed significantly over time. These changes began after the construction of I-70B in the 1960s and have continued in response to community planning efforts. The transportation improvements the City of Grand Junction and Mesa County are now beginning to implement have been planned for more than two decades. Future land use plans reflect the expectation that such improvements would be made to accommodate projected and planned growth in the region (as in the case of the development planned along 24 Road Corridor). Therefore, the Preferred Alternative would not result in effects that would cause an unacceptable level of change within the community. Rather, the Preferred Alternative would be consistent with the community's vision for the future as reflected in City and County land use and transportation plans.

Both the No Action Alternative and the Preferred Alternative may affect environmental resources not regulated at the federal, state, or local level. Such impacts can include the consumption of natural resources, such as fossil fuels and raw materials like gravel. The type of alternative selected may also affect social resources, such as landfill capacity. In most cases, such impacts cannot be quantified, and cannot entirely be avoided. It is recognized that these impacts should be minimized to the extent practicable. Sustainable practices incorporated into the project planning, construction, and maintenance can minimize resource impacts. As part of its environmental ethic and policy, CDOT encourages staff, consultants, and contractors to identify and utilize opportunities and methods to reduce the impact of projects and programs on environmental resources through innovative programs and by providing flexibil-

ity in project planning and construction for the use of sustainable processes and materials. This may include such concepts as natural resource conservation; waste minimization; materials reuse; minimal use of native virgin materials; conservation and efficient use of water and energy; air pollution prevention; preference for "green" purchasing recycled, minimally processed and packaged items; and preference for locally available resources. CDOT encourages the identification and incorporation of proven alternative materials that are as long or longer-lasting, and which require the same or less amount of maintenance, as long as such materials do not impact CDOT's ability to meet its primary obligations for providing a safe and efficient transportation system.

3.20 PERMITS REQUIRED

The following permits and coordination activities may be required to support the construction of the Preferred Alternative:

- **Colorado Discharge Permit System (CDPS)** - The U.S. Environmental Protection Agency (EPA) issues stormwater regulations under the National Pollution Discharge System (NPDES). For Colorado, EPA's authority to issue NPDES permits has been delegated to a state regulatory agency, the Colorado Department of Public Health and Environment (CDPHE). CDPHE implements and enforces the NPDES Programs through the Colorado Discharge Permit System (CDPS) program.
  - CDOT is regulated by the CDPS and, as such has developed programs to comply with the NPDES regulations, specifically its CDPS Municipal Separate Storm Sewer System (MS4) Permit. All activities will be conducted in accordance with the requirements of the MS4 permit. In addition to CDOT, the City of Grand Junction, the Grand Junction Drainage District, and Mesa County hold MS4 permits and participate in the CDPS program. Because these permits may overlap geographically and in content, close coordination between the four agencies holding MS4 permits will be required to identify and implement the elements of each permit.
  - A Stormwater Management Plan (SWMP) will be required to ensure that the water quality of receiving waters is protected during construction. CDOT would prepare a SWMP that outlines in detail the specific best management practices (BMPs) in the project plan for implementation in the field. Included in the SWMP are such aspects as BMP locations, monitoring requirements, seed mix, concrete wash-out provisions, and other relevant information that is provided to the contractor(s).
- **Grand Junction Drainage District License** - A license is required whenever a construction project requires new connections to drainage facilities owned by the Grand Junction Drainage District (GJDD). The GJDD must be notified if stormwater discharges to a GJDD drain are planned or if site work would in any way impact a GJDD drain, including but not limited to, the Ligrani Drain.
- **Section 404 Permit** - A Section 404 Permit, issued by the U.S. Army Corps of Engineers (USACE), is required whenever construction projects or maintenance activities require filling to occur below the ordinary high-water line in any body of water considered a water of the United States (navigable waters of the United States and adjacent wetlands; all tributaries to navigable waters and adjacent wetlands; interstate waters and their tributaries and adjacent wetlands).
- **Fugitive Dust Permit** - A Fugitive Dust Permit is required if more than 25 acres of land is impacted and/or project construction lasts longer than six months.
- **Construction Access Permit** - Construction Access Permits are required for temporary access needs outside the project limits.
- **Floodplains Permit** - Floodplain permits, including a floodplain development permit, Conditional Letter of Map Revision, and Letter of Map Revision is required for floodplain encroachment.
- **Other Local Permits** - Other permits required from the city or county, as needed, such as building, utility or survey permits needed to support project construction requirements.

3.21 SUMMARY OF IMPACTS

Table 3-24 provides a summary of the impacts associated with the No Action Alternative and the Preferred Alternative as evaluated in **Chapter 3**.

Table 3-24 Summary of Impacts

Resource	No Action Alternative	Preferred Alternative
Farmlands	No impact. No prime or unique farmlands present.	No impact. No prime or unique farmlands present.
Threatened and Endangered Species	No impact. Three species identified in vicinity, but lacking suitable habitat in urban study corridor.	No impact. Three species identified in vicinity, but lacking suitable habitat in urban study corridor.
Wildlife and Fisheries	No impact. Some loss of roadside vegetation and habitat marginal through study corridor.	No impact. Some loss of roadside vegetation and habitat marginal through study corridor.
Archaeological Resources	No impact. No prehistoric or historic archaeological resources present.	No impact. No prehistoric or historic archaeological resources present.
Paleontological Resources	No impact. Underlying sedimentary deposits too young and low sensitivity in study corridor.	No impact. Underlying sedimentary deposits too young and low sensitivity in study corridor.
Land Use and Zoning	No impact. Increased congestion associated with the No Action Alternative would cause continued safety issues related to accessing local businesses.	Direct conversion of one parcel from a commercial use to a transportation use. Compatible with existing zoning and existing and future land use.
Social Conditions and Environmental Justice	The No Action Alternative would have no effect on population growth or housing development within or adjacent to the study corridor. Worsening congestion on I-70B would make it increasingly difficult to access businesses, residences, and community facilities within the study corridor and throughout Grand Junction. Traffic, safety, and access problems would increase the number of traffic incidents and decrease emergency response times. There would be no displacement of minority or low-income residents, businesses or employees. Traffic congestion would worsen in the study corridor, hindering access to housing, businesses, community facilities, and the provision of emergency services for minority and low-income populations as well as the overall community. The No Action Alternative would not result in disproportionately high and adverse impacts to minority or low-income populations.	No impact on population growth, housing development, or community facilities. No displacement of low-income or minority residences or businesses. Some temporary impacts during construction such as delays, detours, out-of-direction travel, construction - related noise, and temporary access changes. Benefits residents in study corridor by improving mobility, safety, and access to community facilities and services The Preferred Alternative would not result in disproportionately high and adverse impacts to minority or low-income populations.

Table 3-24 Summary of Impacts (Continued)

Resource	No Action Alternative	Preferred Alternative
Economic Conditions	No land acquisitions or business relocations would result from the No Action Alternative. Worsening congestion on I-70B would make it increasingly difficult to access businesses within the study corridor and throughout Grand Junction. Safety concerns would increase with congestion as a result of the large number of midpoint access locations leading to and from businesses along I-70B. These impacts would create less favorable conditions for businesses within the study corridor.	Improvement of congestion and business access. Temporary access impacts during construction. Relocation of one business and permanent loss of existing parking at eight businesses and temporary loss of parking during construction at one business.
Transportation	*Traffic* - The No Action Alternative would result in increased congestion for almost all of the major intersections in the study corridor. *Safety* - As traffic volumes increase, it is likely the number of accidents would increase due to more potential for vehicle conflicts and higher levels of congestion. *Access* - As traffic volumes increase, access would become more difficult. Delays at signalized intersections would increase and in some cases cause gridlock. Access at unsignalized intersections would also become more difficult as queue backups from signalized intersections block movements. Access at other locations would also become more difficult as traffic volume increases because there would be fewer and shorter gaps in traffic for access to occur. *Transit* - No impacts, although travel times for transit routes using or crossing I-70B are expected to increase.	*Traffic* - Would result in acceptable traffic operations for all intersections evaluated in the study corridor. Other competing and congested routes would also see improvements as traffic diverts to the improved I-70 B. *Safety* - Would improve traffic safety by reducing conflict points and lowering congestion. Improved access and access control between 24 Road and North Avenue will also improve safety. An additional through lane on 1st Street would reduce conflicts between through traffic and turning traffic. One-way improvements at the 4th and 5th Streets and Pitkin and Ute Avenues intersections area would improve safety by reducing the number of conflict points. *Access* - Access between 24 Road and North avenue would be greatly improved by providing a medial to eliminate unsafe uncontrolled left-turn movements. By providing ¾ access points between major signalized intersections, businesses would have frequent ingress points. By limiting the number of access points between signalized intersections, access maneuvers that slow down traffic would be minimized. *Transit* - No impacts, although travel times for transit routes using or crossing I-70B are expected to improve. Also existing bus stops on I-70B would be improved with concrete bus pads and shelters.

Table 3-24 Summary of Impacts (Continued)

Resource	No Action Alternative	Preferred Alternative
Pedestrian and Bicycle Facilities	The No Action Alternative would not improve the current discontinuous nature of sidewalks along I-70B. Also, as traffic in the study corridor increases, conditions for pedestrians and bicyclists would deteriorate.	No adverse impacts. Would improve pedestrian and bicycle connections throughout the study corridor. Consistent with comprehensive plan and bike plans.
Right-of-Way	The No Action Alternative would not require any new right-of-way, property acquisitions, or business and residential relocations in the I-70B West study corridor.	Requires 2.5 acres of new right-of-way. No residential displacements. One business relocation and permanent loss of existing parking at eight businesses and temporary loss of parking during construction at one business.
Air Quality	No impact.	No impact. Project area is in attainment area for all criteria pollutants. No appreciable difference in MSATs.
Noise	The 2030 No Action Alternative traffic noise levels predicted by the model for the 228 receptor locations range from 51 to 70 dB(A), which is an increase of 1 to 2 dB(A) over existing noise levels. A total of 26 modeled locations (representing 48 residences) would exceed the Noise Abatement Criteria of 66 dB(A) in 2030. Of that number, 17 model locations are at or above the 66 dB(A) threshold today. All affected residences are located along the Pitkin Avenue and Ute Avenue one-way couplet through the downtown area.	The predicted 2030 Preferred Alternative traffic noise levels for the same 228 locations within the study corridor range from 51 to 71 dB(A). Noise levels at individual receptors would increase at most by 1 to 2 dB(A) compared to the existing conditions. There would be no capacity increase or roadway alignment changes to Pitkin and Ute Avenues associated with the Preferred Alternative so that noise impacts modeled for the Preferred Alternative would be the same as those for the No Action Alternative in that area. Noise increases at 26 modeled locations. Noise levels at individual receptors would increase by 1 to 2 dB(A). Many properties exceed noise criteria today and all would exceed criteria under No Action Alternative.
Water Resources and Water Quality	The No Action Alternative would not result in direct impacts to water resources and water quality in the study corridor.	No direct impact to water resources. Increase in impervious surfaces and associated runoff by about 4.5 acres. Improvements could result in indirect impacts as a result of new development and redevelopment, and an increase in impervious surfaces; however, increased growth and development are projected to occur, regardless of whether the Preferred Alternative is implemented.

Table 3-24 Summary of Impacts (Continued)

Resource	No Action Alternative	Preferred Alternative
Floodplains	The No Action Alternative would result in no new encroachment on the 100-year floodplain.	Only minor encroachment (approximately 1.2 acres total) into existing floodplain area since the Preferred Alternative is mostly within existing alignment and grade. May improve overall drainage with improved culverts.
Wetlands	No wetlands would be permanently impacted by the No Action Alternative.	0.013 acre of wetlands permanently impacted (0.010 acre of impact is to a jurisdictional wetland).
Vegetation and Noxious Weeds	The No Action Alternative would not involve any changes to the study corridor, thus would not remove vegetation and make additional areas available to the spread of noxious weeds.	Impacts to 62 trees and small areas of roadside vegetation mostly within CDOT right-of-way. Due to urban nature of study corridor, there would be few opportunities for noxious weeds to establish.
Visual Quality	There would be no visual impacts under the No Action Alternative.	Potential to improve visual quality by unifying roadway elements and reducing existing visual confusion.
Historic Preservation	No impacts to the historic properties.	Would require acquisition of less than 100 square feet of land from the northwest and southwest corners of Whitman Park - a reduction of less than 0.1% of the total property. There is no adverse effect on Whitman Park. Temporary increases in noise and dust during construction.
Parks and Recreation	The No Action Alternative would not result in impacts to parks and recreation facilities.	Minor impacts to Whitman Park (less than 100 square feet). This represents less than 0.1% of the total park area.
Hazardous Materials	The No Action Alternative would have no effect on known hazardous material sites.	Potential impacts to four gas stations and one former fuel storage facility. Routine possibilities of discovering asbestos utility pipes and uranium mill tailings during construction.
Construction	The No Action Alternative would not result in construction impacts.	Temporary delays, lane closures, detour routes, reduced speed limits, temporary access changes, dust, and noise likely during construction.
Cumulative Effects	Impacts associated with reasonably foreseeable future projects.	Continued change in land use along I-70B. The Preferred Alternative does not result in effects that would cause an unacceptable level of change within the community. Consistent with the community's vision for the future as identified in land use plans.

3.22 SUMMARY OF MITIGATION MEASURES

Table 3-25 provides a summary of mitigation measures for the Preferred Alternative as discussed in **Chapter 3**.

Table 3-25 Summary of Mitigation Measures

Resource	Mitigation Measures
Farmlands	No mitigation measures are necessary.
Threatened, Endangered, and Sensitive Species	No mitigation measures are necessary.
Wildlife and Fisheries	No mitigation measures are necessary.
Paleontological Resources	If any subsurface bones or other potential fossils are found within the study corridor during construction, the CDOT Staff Paleontologist will be notified immediately to assess their significance and make further recommendations.
Land Use and Zoning	No mitigation measures are necessary. See Section 3.7, Right-of-Way for mitigation measures associated with the acquisition of property.
Social Conditions and Environmental Justice	No mitigation measures are necessary. Good communication with emergency service providers, the community, and residents with regard to road delays, access, and special construction activities will be required during the construction phase. This will be accomplished through radio and public announcements, newspaper notices, on-site signage, and the use of the City's and CDOT's Web sites. See Section 3.18 for mitigation measures associated with construction activities.
Economic Conditions	Throughout the preparation of this EA, CDOT worked closely with business owners and tenants potentially affected by right-of-way or access changes to ensure that their concerns were understood and considered. Information about the right-of-way process and the rights of owners and tenants was provided. Acquisition or relocation of property as a result of this project will comply with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended, and other applicable relocation assistance programs (see **Section 3.7** Right-of-Way). New access will be provided for properties where existing accesses are removed by the Preferred Alternative. No businesses would lose access as a result of the Preferred Alternative. To avoid disruption of business activities during construction, the new access will be provided before the existing access is removed. Good communication with emergency service providers, local businesses, and residents with regard to road delays, access, and special construction activities will be required during the construction phase. This will be accomplished through radio and public announcements, as well as newspaper notices, on-site signage, and the use of the city's Web site. To minimize disruption to traffic and local businesses, construction activities will be staged and work hours varied (see Section 3.18). Throughout the construction stage, access will be preserved for each business within the study corridor.
Pedestrian and Bicycle Facilities	No mitigation measures are necessary. During construction, fencing will be provided to protect pedestrians and bicyclists from construction areas, and signage will be used to direct sidewalk and trail users to detour routes.

Table 3-25 Summary of Mitigation Measures (Continued)

Resource	Mitigation Measures
Right-of-Way	For any person(s) whose real property interests may be impacted by this project, the acquisition of those property interests will comply fully with the ***Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, (Uniform Act)***. The Uniform Act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from Federal or federally assisted programs or projects. It was created to provide for and insure the fair and equitable treatment of all such persons. To further ensure that the provisions contained within this act are applied "uniformally", CDOT requires Uniform Act compliance on any project for which it has oversight responsibility regardless of the funding source. Additionally, the Fifth Amendment of the United States Constitution provides that private property may not be taken for a public use without payment of "just compensation." All impacted owners will be provided notification of the acquiring agency's intent to acquire an interest in their property including a written offer letter of just compensation specifically describing those property interests. A Right-of-Way Specialist will be assigned to each property owner to assist them with this process. In certain situations, it may also be necessary to acquire improvements that are located within a proposed acquisition parcel. In those instances where the improvements are occupied, it becomes necessary to "relocate" those individuals from the subject property (residential or business) to a replacement site. The Uniform Act provides for numerous benefits to these individuals to assist them both financially and with advisory services related to relocating their residence or business operation. Although the benefits available under the Uniform Act are far too numerous and complex to discuss in detail in this document, they are available to both owner occupants and tenants of either residential or business properties. In some situations, only personal property must be moved from the real property and this is also covered under the relocation program. As soon as feasible, any person scheduled to be displaced will be furnished with a general written description of the displacing Agency's relocation program which provides at a minimum, detailed information related to eligibility requirements, advisory services and assistance, payments, and the appeal process. It also provides notification that the displaced person(s) **will not be required to move without at least 90 days advance written notice. For residential relocatees, this notice cannot be provided until a written offer to acquire the subject property has been presented, and at least one comparable replacement dwelling has been made available.** Relocation benefits will be provided to all eligible persons regardless of race, color, religion, sex or national origin. Benefits provided under the Act, to which each eligible owner or tenant may be entitled, will be determined on an individual basis and explained to them in detail by an assigned Right-of-Way Specialist. To minimize disruption to traffic and local businesses, construction activities will be staged and work hours varied (see Section 3.18). Throughout the construction stage, access will be preserved for each business within the study corridor.

Table 3-25 Summary of Mitigation Measures (Continued)

Resource	Mitigation Measures
Right-of-Way (continued)	All reasonable opportunities to avoid relocations and minimize the impacts of acquisition to private and public property have been taken in the conceptual design of the Preferred Alternative. The Preferred Alternative is mostly centered in the existing right-of-way for the main roadway and, in general, balances parcel impacts at intersections in all directions. For new access locations between signalized intersections, the location of the access was adjusted to minimize impacts while still addressing traffic and safety needs. For the eight businesses with permanent parking impacts, most would be able to accommodate parking losses with other on-site parking locations. Loss of parking will be replaced or compensated by payment of damages through the Uniform Act process. With recent growth pressure from rapid gains in the oil and gas industry, replacement property for the displaced business (Watermark Spas) is at a premium in the Grand Junction area. While the total number of commercial and industrial properties in the Grand Junction area is not readily available, numerous realtors have listings of commercial and industrial properties for sale or lease. Prices are highly variable (from tens of thousands of dollars to millions) depending on location and amenities. Opportunities to relocate to established business locations are currently very competitive and may require relocating to other parts of the city.
Air Quality	Construction mitigation includes monitoring of diesel construction equipment idling times to prevent excessive exhaust emissions, evaluation of low emissions equipment and clean engine technologies for diesel construction equipment prior to construction, use of low-sulfur fuels will be required for diesel construction equipment and application of water or dust palliatives to suppress dust entrainment by construction activity (see Construction Mitigation).
Noise	Noise mitigation was investigated for affected residences along Pitkin and Ute Avenues. Results from this analysis indicate that it would not be feasible to construct noise mitigation for these small clusters of homes located very close to the roadway within a predominately commercial area. For noise mitigation to be feasible a continuous barrier without gaps would be required. Openings or gaps in a noise wall reduce the effectiveness of noise abatement so that the minimum feasible 5 dB(A) insertion loss cannot be achieved. Openings within the noise wall for home owner street access would not be allowed. This would not be a practical or acceptable situation for affected home owners, thus, any structural wall constructed within these very tight constraints would not be considered feasible. To meet CDOT cost-benefit criterion, 4 or more contiguous homes would have to agree to construction of a noise wall to be considered reasonable. Construction noise impacts, while temporary, will be mitigated by limiting work to daylight hours near residential areas and by requiring the contractor to use well-maintained equipment (particularly mufflers), to the extent feasible (see Section 3.18 Construction). Any night time construction is subject to variance from any local city noise ordinance.
Water Resources and Water Quality	The use of standard erosion and sediment control BMPs in accordance with *Erosion Control and Storm Water Quality Guide*, CDOT, 2002 will be included in the final design plans. All work on this project will be in conformity with Section 107.25 (Water Quality Control) and Section 208 (Erosion Control) of the *CDOT Standard Specifications for Road and Bridge Construction*. The design shall also comply with the policy of Executive Order 11990 regarding impacts to wetlands.

Table 3-25 Summary of Mitigation Measures (Continued)

Resource	Mitigation Measures
Water Resources and Water Quality (Continued)	Water quality mitigation will adhere to the Municipal Separate Storm Sewer System (MS4) permit requirements and programs defined within the MS4 permit. Four agencies hold MS4 permits in the study corridor: CDOT, the Grand Junction Drainage District, the City of Grand Junction, and Mesa County. The criteria developed for each of these permits will need to be reviewed prior to final design and construction. Because these permits may overlap geographically and in content, close coordination between the four agencies holding MS4 permits will be required to identify and implement the elements of the permits. In addition to MS4 control measures, the following specific BMPs from *CDOT's Erosion Control and Storm Water Quality Guide* will be applied during construction to reduce construction-related and/or long-term operation impacts to water resources and water quality as appropriate: • All disturbed areas will be revegetated with native grass and forb species. Seed, mulch and mulch tackifier will be applied in phases throughout construction. • Where permanent seeding operations are not feasible due to seasonal constraints (e.g., summer and winter months), disturbed areas will have mulch and mulch tackifier applied to prevent erosion. • Erosion control blankets will be used on steep, newly seeded slopes to control erosion and to promote the establishment of vegetation. Slopes should be roughened at all times and concrete washout contained. • Temporary erosion control blankets will have flexible natural fibers. • Erosion bales, erosion logs, silt fence or other sediment control devices will be used as sediment barriers and filters adjacent to wetlands, surface waterways and at inlets where appropriate. • To minimize the loss of sand from the road surface during winter sanding operations, sediment catch basins will be included during construction and put in place permanently with continual maintenance. • Where appropriate, slope drains will be used to convey concentrated runoff from top to bottom of the disturbed slopes. Slope and cross-drain outlets will be constructed to trap sediment. • Storm drain inlet protection will be used where appropriate to trap sediment before it enters the cross-drain. • Check dams will be used where appropriate to slow the velocity of water through roadside ditches and in swales. • Work areas will be limited as much as possible to minimize construction impacts to vegetation. • Temporary detention ponds (during construction) will be used to allow sediment to settle out of runoff before it leaves the construction area. These ponds may be combined with permanent detention ponds. • Structural BMPs may include extended detention basins with sediment forebays, grass swales and grass buffers to retain sediment and roadway pollutants resulting from winter sanding, chemical deicing, and normal traffic operations. • Implement temporary and permanent BMPs for erosion control, sediment control, and drainageway protection as required by local and state permitting requirements.

Table 3-25 Summary of Mitigation Measures (Continued)

Resource	Mitigation Measures
Water Resources and Water Quality (continued)	• Non-structural BMPs may include litter and debris control, and landscaping and vegetative practices. • Settling ponds for effluent from dewatering operations, if needed. • Water utilized for construction and/or irrigation will be derived through municipal sources. Therefore, allocations will not exceed the upper Colorado River Basin threshold. • If contaminated groundwater is encountered during the dewatering process, mechanisms will be in place to analyze groundwater for contaminants and effectively treat this groundwater pumped discharge, as necessary. Additional mitigation for hazardous materials is described in Section 3.17.3.
Floodplains	Best management practices will be followed to reduce temporary and permanent impacts, if any. Specific BMPs to be used in the study corridor will not be determined until final design. Additional mitigation measures also include: • Avoid excess application and introduction of chemicals into the aquatic ecosystem, while temporary fills will utilize fill that avoids an increase in suspended solids or pollution. • Construction staging areas will be located a distance of greater than 100 feet from adjacent stream/riparian area to avoid disturbance to existing vegetation, avoid point source discharges, and to prevent spills from entering the aquatic ecosystem (including concrete washout). • Erosion, sedimentation and revegetation techniques, as well as the use of standard erosion control measures, will be used to minimize impacts to the floodplain, streambanks and shoulders. All disturbed areas would be appropriately revegetated with native vegetation. • Adherence to City and CDOT hydraulic design criteria for major and minor storm drainage. • Coordination with City of Grand Junction, Mesa County and FEMA on any encroachment of the floodplain, and adherence to hydraulic design criteria. • Floodplain permits, including a floodplain development permit, Conditional Letter of Map Revision, and Letter of Map Revision will be acquired for floodplain encroachment. • During design of the Preferred Alternative, avoidance of longitudinal and significant encroachments into the floodplains will be considered. • Avoidance of any changes in historical flow paths. • Adherence to all FEMA requirements and conformance of all hydraulic designs to the requirements of 23 CFR 650. • Culvert and channel improvements will be designated to convey 100-year flows, and will follow CDOT recommendations for the 50- to 100-year flood event capacity.

Table 3-25 Summary of Mitigation Measures (Continued)

Resource	Mitigation Measures
Wetlands	Section 404 permitting requirements will be discussed with the USACE. Since total permanent impacts are estimated to be 0.013 acres, 0.010 acres of impacts to a jurisdictional wetland and 0.003 acres of impacts to a non-jurisdictional wetland, this project may meet the conditions of nationwide permit (NP) #14 for linear transportation projects (awaiting USACE verification). CDOT requires that mitigation be implemented at a 1:1 ratio for all wetlands impacted by project activities regardless of their jurisdictional status. Three potential on-site mitigation opportunities exist within the study area including: widening and reconfiguration of the drainage ditch associated with Wetland 1, establishing shrub species at a CDOW-maintained pond, and potential extension of wetlands associated with the Ligrani Drain. Reconfiguration of Wetland 1 may be the preferred site as it would be a better functional in-kind replacement for impacts to Wetlands 3 and 4. The potential for mitigation at these sites would require cooperation from either CDOW or the controlling authority of the Ligrani Drain. It may also be necessary to establish any potential impacts to established water rights associated with these drainages. Potential mitigation sites are more fully discussed in the Wetland Finding in Appendix D.
Vegetation and Noxious Weeds	All CDOT revegetation BMPs and guidelines will be followed to ensure adequate revegetation of the study corridor. All disturbed areas will be seeded in phases throughout construction. Although specific BMPs to be used in the study corridor will not be determined until final design, mitigation measures will include: • Minimize the amount of disturbance and limit the amount of time that disturbed areas are allowed to be non-vegetated. • Implement an Integrated Weed Management Plan for the project. • Avoid disturbance to existing trees, shrubs and vegetation, and areas with a minor weed cover to the maximum extent possible. • Implement temporary and permanent erosion control measures to limit erosion and soil loss. Erosion control blankets will be used on steep, newly seeded slopes to control erosion and to promote the establishment of vegetation. Slopes will be roughened at all times and concrete washout contained. • Time tree removal for outside nesting season per the Migratory Bird Treaty Act (MBTA). • Revegetate all disturbed areas with native grass and forb species. Seed, mulch, and mulch tackifier will be applied in phases throughout construction. • Replace removed trees, shrubs and vegetation on a 1:1 basis. Replacement vegetation will be maintained by the City of Grand Junction through agreement and per Colorado revised Statute 43-2-135 regarding division of authority over streets.

Table 3-25 Summary of Mitigation Measures (Continued)

Resource	Mitigation Measures
Vegetation and Noxious Weeds (continued)	Since soil disturbance with accompanying invasion by noxious weed species can be associated with highway construction, an Integrated Noxious Weed Management Plan in accordance with CDOT guidelines will be prepared during final design for review by CDOT. This plan will be incorporated into the project design and implemented during construction. Specific best management practices (BMPs) will be required during construction to reduce the potential for introduction and spread of noxious weed species and include: • Noxious weed surveys will be performed by a qualified weed specialist. • Mapping will be included in the construction documents along with appropriate control methods for noxious weeds. • Highway right-of-way areas will periodically be inspected by a weed specialist during construction and during post-construction weed monitoring for invasion of noxious weeds. • Weed management measures will include removal of heavily infested topsoil, chemical treatment of lightly infested topsoil, limiting disturbance areas, phased seeding with native species throughout the project, monitoring during and after construction, other chemical and/or mechanical treatments. • Use of herbicides will include selection of appropriate herbicides and timing of herbicide spraying. • All areas disturbed by construction activities but not planned for ornamental landscaping will be revegetated with an appropriate certified weed-free native seed mix appropriate for soils. • Contractor will prevent the spread of noxious weeds that could be picked up by construction equipment. All equipment will be cleaned before off-loading at the project site. Project staging areas will be mowed and cleared of noxious weeds prior to construction. • Project design and construction engineer will coordinate with the Mesa County weed supervisor, local governing bodies, and landowners to assure proper noxious weed management activities. • Certified weed-free hay and/or mulch will be used in all revegetated areas. • Fertilizers will be allowed in ornamental landscape areas by project engineer approval, only. • Supplemental weed control measures may be added during design and construction planning. • The removal of vegetation will be scheduled to avoid the breeding season of birds from April 1 to August 31. • Preventative Control Measures for project design and construction may include: - Native Plants: Use of native species in revegetation sites. - Weed Free Forage Act: Materials used for the project will be inspected and regulated under the Weed Free Forage Act, Title 35, Article 27.5, CRS. - Topsoil Management: When salvaging topsoil from on-site construction locations, the potential for spread of noxious weeds will be considered. Importing topsoil onto the project site shall not be allowed. - Equipment Management: Equipment will remain on designated roadways and stay out of weed-infested areas until the areas are treated. All equipment will be cleaned of all soil and vegetative plant parts prior to arriving on or leaving the project site.

Table 3-25 Summary of Mitigation Measures (Continued)

Resource	Mitigation Measures
Visual Quality	Existing street lights and power poles impacted by proposed improvements would be replaced with fixtures that match the newer poles and luminaries on I-70B. Design guidelines will be developed during the preliminary phase to create uniform landscape and architectural treatments throughout the study corridor. The addition of street landscaping and urban design amenities would help unify the motorist's view from the road, soften the increased width of roadway pavement, and reduce visual confusion. Overall, with this mitigation the visual quality of I-70B would be improved. The removal of approximately 2 mature shade trees adjacent to Whitman Park within CDOT right-of-way would not cause a significant change in the visual quality of this park since there are over 140 trees within the park. The trees that would require removal are within CDOT right-of-way located at the northwest and southwest corners of the park. During conceptual design, all effort was made to avoid impact to trees. Where tree removal is unavoidable, trees will be replaced with similar species in coordination with the City of Grand Junction.
Historic Preservation	Because a no adverse effect finding for Whitman Park was determined with SHPO concurrence, no mitigation is necessary. Construction noise impacts, while temporary, would be mitigated by requiring the contractor to use well-maintained equipment (particularly mufflers) to the extent feasible.If buried archaeological remains are exposed during any phase of construction, the CDOT Senior Staff Archaeologist will be contacted to evaluate the discovery and facilitate all appropriate interagency coordination prior to the resumption of work.
Parks and Recreation	No mitigation is required. (See **Appendix E**, Section 4(f) Programmatic Evaluation)
Hazardous Materials	The potential risks associated with hazardous material on construction projects are carefully considered. For instance, Section 250 "Environmental Health and Safety Management" of the Standard Specifications for Road and Bridge Construction (CDOT, 2005) provides for the protection of the environment, persons and property from contaminants and includes special requirements for addressing hazardous material, if encountered. Construction on the project is expected to include pavement removal, re-paving and minor utility relocation and, as a result, encountering hazardous material in soils and groundwater is not anticipated. However, there are documented USTs, LUSTs and other recognized environmental conditions at locations along the study corridor. Precautions will be taken by construction personnel to monitor excavations for the possible presence of volatile organic compounds during any excavation that extends below the base of pavement in areas adjacent to listed UST and LUST sites. Construction personnel will also be trained to look for and recognize asbestos containing materials in soil. Construction debris or asbestos utility lines will be inspected by appropriate professionals and dealt with in accordance with Colorado Department of Public Health and Environment (CDPHE) regulations pertaining to asbestos waste management (6CCR 1007-2, Part 1, Section 5).

Table 3-25 Summary of Mitigation Measures (Continued)

Resource	Mitigation Measures
Hazardous Materials (Continued)	Prior to excavation or removal of pavement on the project, research will be conducted to determine the location of mill tailings beneath downtown Grand Junction streets. The CDPHE Grand Junction office maintains records of uranium mill tailings activities associated with the cleaning of the old Climax Mill site. Monitoring for uranium radiation will be conducted in areas where mill tailings are suspected to be present. If mill tailings are encountered during construction of the project they will be handled in accordance with CDPHE and City of Grand Junction regulations for handling, transportation and disposal of uranium mill tailings.
Construction	Mitigation for direct impacts includes implementation of some or all of the following measures during construction: • Develop traffic management plans. • Keep as many lanes open as possible during peak travel times by temporarily shifting these lanes within the existing framework of the roadway. • Coordinate detour routes to avoid overloading local streets with detour traffic, where possible. • Maintain access to local businesses/residences. • Coordinate with emergency service providers to minimize delays and ensure access to properties. • Use signage, television, and radio announcements to announce and advertise timing of road closures. • Use noise blankets on equipment. • Reroute truck traffic away from residential areas as much as possible. • Combine noisy operations to occur during the same period. • Conduct high-noise activities during daytime construction where possible. • Suppress dust through watering or dust palliative. • Implement temporary and permanent BMPs for erosion control, sediment control, and drainageway protection as required by local and state permitting requirements. • Provide construction fencing to protect pedestrians and bicyclists from construction areas. • Use signage to direct pedestrians and bicyclists to temporary sidewalk and trail detours. • Idling times for construction equipment will be monitored to prevent exhaust emissions. • Low-sulfur fuels will be required for diesel construction equipment • Low emissions equipment and clean engine technologies for diesel construction equipment will be evaluated prior to construction. • Use signage to direct pedestrians and bicyclists to temporary sidewalk and trail detours. In addition, CDOT will require the contractor to provide public information services.

Chapter 4: Comments and Coordination

This chapter describes the integrated program of agency and public coordination and involvement activities conducted during the development of the Environmental Assessment (EA). These activities were specifically conducted to be open, inclusive, and ongoing throughout the preparation of the EA.

The objectives of the agency and public involvement program were:

- *To provide opportunities for timely public comment and input to project decision-makers.*
- *To develop wide-ranging public support for the project.*

The activities of the agency and public involvement program included agency and public scoping meetings, public open houses, business owner contacts, newsletters, mailings, press releases, a project Web site, a media information program, advertisements, and a formal public hearing scheduled during the EA review period. Special effort was made to reach low-income and minority communities located within the I-70B West study corridor (see Section 4.2.2).

4.1 AGENCY COORDINATION

Coordination with local, state, and federal agencies occurred throughout the project to ensure compliance with agency policies and procedures, transportation planning requirements, NEPA requirements, and accurate resource identification and impact evaluation. Agency coordination was conducted through formal and informal means of communication.

4.1.1 Agency Scoping

As part of the NEPA process, project scoping meetings were held with agencies early on. The purpose of the scoping process is to identify agency concerns; define the important environmental issues, including the elimination of non-significant issues; and identify any additional requirements.

In September 2006, letters were sent to the 16 agencies listed below to attend an agency scoping meeting on September 28, 2006. These letters described the project and encouraged agencies to identify any concerns related to the project. Representatives from two local agencies attended the meeting: the Grand Junction Drainage District and the Grand Junction Historic Preservation Board. Also in attendance were staff for the City of Grand Junction, CDOT, FHWA, and the Consultant Team. One letter was received from the State Historic Preservation Officer. Copies of the scoping letters are included in Appendix C. The agencies contacted included:

Ongoing agency coordination ensures compliance with policies and procedures.

- U.S. Environmental Protection Agency
- U.S. Department of the Interior-Bureau of Reclamation
- U.S. Department of the Interior-National Park Service
- U.S. Army Corps of Engineers
- U.S. Department of Energy
- U.S. Fish and Wildlife Service
- Colorado Department of Public Health and Environment
- Colorado Division of Wildlife
- Colorado Department of Natural Resources
- Colorado State Parks
- Colorado Historical Society, State Historic Preservation Officer
- Colorado Riverfront Commission
- City of Grand Junction-Historic Preservation Board
- Grand Junction Parks and Recreation Department
- Grand Junction Drainage District
- Grand Valley Transit

Other agency coordination was conducted through project submittals and Project Working Group Meetings, as described in Section 4.1.2. In addition to the resource agency scoping meeting discussed above, the following additional scoping meetings were held.

- **FHWA Scoping Meeting, August 8, 2006**
  Agencies in attendance: Colorado Department of Transportation, Region 3 and FHWA.

- **CDOT Environmental Programs Branch Scoping Meeting, September 11, 2006**
  Agencies in attendance: Colorado Department of Transportation, Region 3 and Environmental Programs Branch, and FHWA.

4.1.2 Project Working Group

Project Working Group meetings were convened at specific times throughout the project to brief agency stakeholders on the project's progress and to involve them in key policy decisions. This group met on a regular basis to discuss and resolve project issues. The dates of each of the Project Working Group meetings are shown below along with the issues covered at each meeting. Two final meetings are planned for September 2007 and January 2008.

4.2 PUBLIC INVOLVEMENT ACTIVITIES

Public involvement was conducted throughout the development of this EA to ensure widespread public awareness of the project and to provide opportunities for timely public input to project decision-making. Participants included interested citizens, property owners, business owners and operators, and the general public. Special effort was made to encourage the participation of the low-income and minority populations within the study corridor through project mailings, flyers, and notices at community facilities (see Section 4.2.2).

Project Working Group

Purpose:

To ensure effective and continuous communication between the principal partners on this project a Project Working Group was established. The Project Working Group focused primarily on technical and procedural issues throughout the development of the project. The Project Working Group included staff from CDOT Region 3, FHWA, City of Grand Junction, Mesa County, and the Consultant Team.

Roles/Responsibilities/Expectations:

- *Execute process*
- *Perform technical tasks*
- *Environmental analysis*
- *Transportation planning analysis*
- *Design engineering*
- *Develop recommendations*
- *Provide required input at appropriate times*
- *Document concurrence when achieved*

Table 4-1 Project Working Group Meetings

Meeting Date	Topics Covered
August 16, 2006	• Project kick-off (including project needs, study approach; environmental documentation approach; public involvement program)
September 1, 2006	• Update on data collection • Preparation for NEPA scoping meetings • Preparation for first public meeting. Review of project goals and objectives, Purpose and Need, and project termini.
September 29, 2006	• Review of transportation planning (No Action Alternative, traffic forecasts, etc.) • Review of environmental planning (logical termini, results of agency scoping, data collection) • Engineering design standards development • Public involvement progress (Right of Entry letters sent out, Web site up and running, set-up of business meetings) • Public meeting debrief • Travel demand model review • Initial alternatives development

Table 4-1 Project Working Group Meetings (Continued)

Meeting Date	Topics Covered
November 2, 2006	• Alternatives development at: - 24 Road to Rimrock - North Avenue Interchange - 1st Street and Grand Avenue Intersection - Ute/Pitkin: 1st/2nd Streets and 4th/5th Streets • Public involvement update • Traffic forecast results
November 16, 2006	• Review of business owner outreach • Review of I-70B planning context • Review of traffic data
November 30, 2006	• Discussion of evaluation criteria and measures of effectiveness • Presentation of preliminary alternatives screening
December 19, 2006	• Environmental planning progress update • Planning for January public meeting • Presentation of additional alternatives screening data
January 25, 2007	• Review of public meeting and public comments • Recommendation of Preferred Alternative to be analyzed in the EA
February 28, 2007	• Preferred Alternative definition • EA document process
May 17, 2007	• Project update and EA review process • Review of Preferred Alternative

4.2.1 Public Meetings

Three public meetings, using an open house format were held during the course of the project With this format no formal presentation is given, allowing attendees to review all the information regardless of the time they were able to attend the meeting. The information utilized at the public meetings was also posted on the Web site after the public meeting had occurred. The dates on which public meetings were held are listed below along with the issues covered:

- **Open House No. 1 — September 28, 2006**
  First Congregational Church - Pilgrim Hall
  1425 N. 5th Street
  Grand Junction, CO
  A public scoping meeting was held to review the project's purpose, the study corridor needs, and transportation and environmental issues, and to provide information to the public on how they can be involved as the project progresses. This first meeting provided the public an opportunity to comment on the project and identify issues of concern from the viewpoint of area residents and businesses.

- **Spanish Language Public Meeting — November 16, 2006**
  St. Joseph's Catholic Church - Parish Hall
  230 N. 3rd Street
  Grand Junction, CO
  A meeting held in Spanish, specifically for Hispanic community members to review the information presented on September 28, 2006.

- **Open House No. 2 — January 24, 2007**
  Two Rivers Convention Center
  159 Main Street
  Grand Junction, CO
  An open house was held to review the alternatives development and evaluation process and obtain input from the public on the alternatives.

4.2.2 Specialized Environmental Justice Outreach

Specialized outreach to low-income and minority populations was conducted as part of the public involvement program. Based on U.S. Census Bureau data, field investigation, and coordination with local agencies, the area

south of I-70B was identified as a potential area of environmental justice concern. While it was expected that some of the residents and businesses in this area would receive project information through traditional communications (newspapers, television, radio) and through project mailings (newsletters and meeting announcements), additional efforts were made to ensure an increased level of project awareness and participation in the project. Specialized outreach to environmental justice populations included the following:

Spanish Language Outreach

Spanish language print materials and translation services were made available at public meetings. The project Web site also featured a Spanish language version of print material accessible through a link on the project home page (www.dot.state.co.us/I70Bwest/). Public meetings were advertised using both English and Spanish press. For example, Spanish language radio announcements were aired to advertise upcoming public meetings on La Maquina from November 9 to November 16, 2006, and again the week of January 22, 2007.

Open House No. 1

An announcement (English/Spanish) was hand-delivered to various low-income and/or minority residences and businesses including:

- Riverside Task Force via Linda Jilla
- Hispanic Grocery Store (Mercado) at Lawrence and Colorado Avenue
- Latina Anglo Alliance
- Westlake Mobile Home Park
- Single-family houses on Ute and Pitkin from 1st to 15th Streets

Spanish Language Public Meeting

A specialized meeting designed to specifically target the Hispanic community was coordinated for additional outreach and information exchange. Distribution of the Spanish language meeting announcements occurred via the following persons and locations:

- Jose Talavera (Mexican community leader) to distribute at St. Joseph's after masses 11/11/06
- Karen Sherman (director of Project Common Ground) to distribute at an ESL parent meeting at Nisley Elementary
- Marillac Clinic by Diana Hunt (via Karen Sherman)
- Handed out at Western Colorado Justice for Immigrants meeting 11/8/06
- Convenience store in Riverside
- Shiner's Car Wash
- Members of the Hispanic community (by Larry Archuleta, a community leader)

Open House No. 2

A meeting announcement (English/Spanish) was mailed using the project database. In addition, approximately 200 Spanish language only announcements were distributed throughout the community and hand-delivered to various low-income and/or minority residences and businesses including:

- Members of Riverside Community (identified by Linda Villa)
- Convenience store in Riverside
- Shiner's Car Wash
- Members of the Hispanic community (by Larry Archuleta, a community leader)

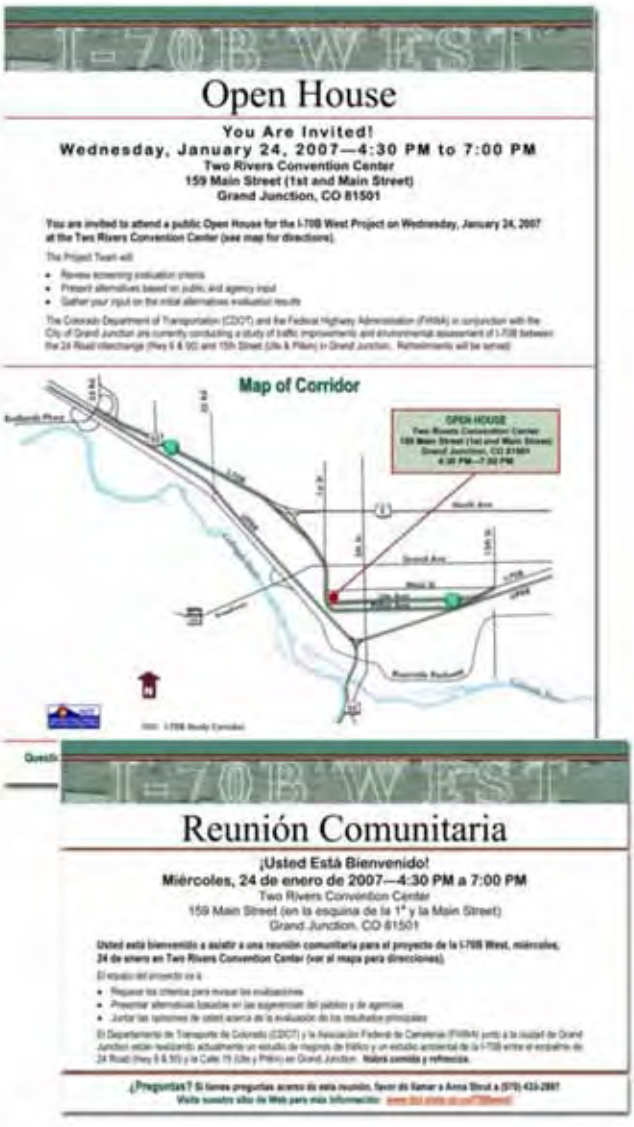
Participation by members of the environmental justice community is estimated in **Table 4-2.**

Table 4-2 Estimated Participation in Project Events by Environmental Justice (EJ) Community Members

Event	Number of Attendees	Number of Attendees with Addresses in Identified EJ Areas	Number of Spanish Speakers
Open House No. 1	52	6	0
Spanish Language Meeting	7	4	7
Open House No. 2	106	9	8

4.2.3 Specialized Business Outreach

The Project Team dedicated specific days to business outreach as the alternatives were developed. Using the alternative limits and a general understanding of their potential impacts, the Project Team contacted the owners and/or managers of the properties that could be impacted by the alternatives. The meetings focused on business access and operational needs as they related to I-70B and the frontage roads. **Table 4-3** shows the meetings held with study corridor businesses by date.


I-70B WEST

Open House

You Are Invited!
Wednesday, January 24, 2007—4:30 PM to 7:00 PM
Two Rivers Convention Center
159 Main Street (1st and Main Street)
Grand Junction, CO 81501

You are invited to attend a public Open House for the I-70B West Project on Wednesday, January 24, 2007 at the Two Rivers Convention Center (see map for directions).

The Project Team will:
- Review screening evaluation criteria
- Present alternatives based on public and agency input
- Gather your input on the initial alternatives evaluation results

The Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA) in conjunction with the City of Grand Junction are currently conducting a study of traffic improvements and environmental assessment of I-70B between the 24 Road interchange (Hwy 6 & 50) and 15th Street (Ute & Pitkin) in Grand Junction. Refreshments will be served.

Map of Corridor

OPEN HOUSE
Two Rivers Convention Center
159 Main Street (1st and Main Street)
Grand Junction, CO 81501
4:30 PM—7:00 PM

I-70B Study Corridor

I-70B WEST

Reunión Comunitaria

¡Usted Está Bienvenido!
Miércoles, 24 de enero de 2007—4:30 PM a 7:00 PM
Two Rivers Convention Center
159 Main Street (en la esquina de la 1° y la Main Street)
Grand Junction, CO 81501

Usted está bienvenido a asistir a una reunión comunitaria para el proyecto de la I-70B West, miércoles, 24 de enero en Two Rivers Convention Center (ver el mapa para direcciones).

El equipo del proyecto va a:
- Repasar los criterios para revisar las evaluaciones
- Presentar alternativas basadas en las sugerencias del público y de agencias
- Juntar las opiniones de usted acerca de la evaluación de los resultados principales

El Departamento de Transporte de Colorado (CDOT) y la Asociación Federal de Carreteras (FHWA) junto a la ciudad de Grand Junction están realizando actualmente un estudio de mejoras de tráfico y un estudio ambiental de la I-70B entre el empalme de 24 Road (Hwy 6 & 50) y la Calle 15 (Ute y Pitkin) en Grand Junction. Habrá comida y refrescos.

¿Preguntas? Si tienes preguntas acerca de esta reunión, favor de llamar a Anna Strut a (970) 433-2867
Visita nuestro sitio de Web para más información: www.dot.state.co.us/I70Bwest/

Project announcements, in both English and Spanish, were important in providing timely information about the project and upcoming public involvement activities to residential and business property owners and tenants.

4.2.4 Project Web site

A project Web site was accessible to the public almost immediately following the project's inception. In addition to project information, it included updated project materials, public meeting materials, information on how to contact project representatives, and a comment sheet with an automatic e-mail link to a Project Team staff member. This e-mail link provided the public an opportunity to submit comments and contact information online. To date six comments have been received via the Web site.


Colorado
i-70B West

I-70B West Study

En Español

What's New

News articles about this study

January 24, 2007 Public Meeting Summary: Comments, Boards and Materials

Open House Comment Form

We welcome your comments.

Study Home
Public Involvement
FAQ
En Español
Related Studies
Media Releases
Contact Us

Timeframe		Study Focus	Get Involved!
2006	Fall	What are the issues?	Open House
		What are the study goals?	
		What does the data say?	
2007	Winter	What can we do to improve I-70B West?	Open House
	Spring	What benefits and challenges do the alternatives have?	
	Summer		Open House
	Fall	What did we decide?	

Open House held in January 2007

Our latest open house was held on January 24, 4:30-7:00 p.m. at the Two Rivers Convention Center, 159 Main Street.

The meeting included information on:

- Project context
- Range of alternatives considered
- Evaluation criteria
- Alternatives screening process
- Alternatives analysis and approach
- How to get involved on the project

Download the meeting announcement

Download the meeting boards and materials

Kick-Off for I-70B Traffic Planning

An Open House was held at the First Congregational Church in Grand Junction on September 28, 2006. Download the PDF version of the meeting presentation and handout (1MB)

Questions? Contact Craig Snyder or Craig Gaskill

Email Page Master regarding information or comments about this page.
Email Web Master regarding website functionality or "look & feel"

Last Modified: Tuesday, July 31, 2007
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Postings on the project Web site provided the public with up-to-date project information.

Table 4-3 Business Contact Meetings

Business Name	Address	Meeting date
Downtown Development Authority	248 S. 4th Street	September 15, 2006
Abbey Carpets	2571 Hwy 6/50	October 19, 2006
Ace Homes	2485 Hwy 6/50	October 19, 2006
All Pet Center	424 S. 5th	October 19, 2006
Big O Tire	2462 Hwy 6/50	October 19, 2006
Caldwell Banker	2499 Hwy 6/50	October 19, 2006
Drive Train Industries	201 S. 6th	October 19, 2006
Fireplace West	2493 Hwy 6/50	October 19, 2006
Hill and Homes	2573 Hwy 6/50	October 19, 2006
Modular Housing	2487 Hwy 6/50	October 19, 2006
Rocky Mountain Subaru	2496 Hwy 6/50	October 19, 2006
Sunshine Taxi	1321 Ute	October 19, 2006
Rex TV	2469 Hwy 6/50	November 14, 2006
Vail Valley Holdings	1st Street	November 14, 2006
Golden Villa Homes	2475 Hwy 6/50	November 17, 2006
Cottonwood Mall Association	2493 Hwy 6/50	November 17, 2006
Grand Valley Autos	2589 Hwy 6/50	November 17, 2006
Haley's Auto	2465 Hwy 6/50	November 17, 2006
Last Chance Liquor	1203 Pitkin Ave.	November 17, 2006
Mor Storage	2465 Hwy 6/50	November 17, 2006
Quizno's	517 N. 1st Street	November 17, 2006
Rite Aid	400 N. 1st Street	November 17, 2006
Binswanger Glass	2463 Hwy 6/50	December 1, 2006
Marine Max	2490 Hwy 6/50	December 1, 2006
Watermark Spas	2491 Hwy 6/50	December 1, 2006
Big O Tire	2462 Hwy 6/50	March 7, 2007
Mesa Music	2599 Hwy 6/50	March 7, 2007
Watermark Spas	2491 Hwy 6/50	March 7, 2007
Marine Max	2490 Hwy 6/50	March 7, 2007
Modular Housing	2487 Hwy 6/50	March 15, 2007
Shriners Car Wash and Lube	2460 Hwy 6/50	March 15, 2007
Grand Central Plaza	200 West Grand Avenue	March 15, 2007
Conoco/Eagle Convenience,	1154 North 4th Street	March 15, 2007
Holman House	2494 Hwy 6/50	March 15, 2007
Golden Villa Homes	2475 Hwy 6/50	March 26, 2007
Grand Valley Autos	2589 Hwy 6/50	March 26, 2007
Office Depot	24 ½ Road and I-70B	March 26, 2007
Valley Plaza	637 North Avenue	March 26, 2007
Pine Country Trailer and Truck Sales	2520 Hwy 6/50	March 26, 2007

Table 4-3 Business Contact Meetings

Business Name	Address	Meeting date
Mesa Pawn	225 South 2nd Street	March 26, 2007
Abbey Carpets,	2571 Hwy 6/50	March 26, 2007
Rocky Mountain Subaru	2496 Hwy 6/50	March 26, 2007
Reposed Manufactured Homes	2478 Highway 6/50 and other properties between 24 ¾ Road and 25th road	April 2, 2007
Mesa Music	2599 Hwy 6/50	May 3, 2007
Auto Zone	2525 Hwy 6/50	May 4, 2007
Capco Tile	2522 Hwy 6/50	May 4, 2007
Skyline Warehouse	2522 Hwy 6/50	May 4, 2007
Pine Country Trailer and Truck Sales	2520 Hwy 6/50	May 4, 2007
Value Lodge	104 White Ave	September 13, 2007
Watermark Spas & Pools Inc.	2491 Hwy 6/50	October 24, 2007

4.2.5 Media Outreach

A variety of activities were implemented to engage the media and provide coverage of the project. The information provided included news releases, display ads, and media advisories announcing upcoming project open houses. The news releases were sent to each of the print and electronic media for their use approximately ten days prior to each open house. Quarter-page newspaper display ads were published one week before and the week of the open houses. Media advisories were distributed to all of the media for use on the day of open houses. In the morning prior to each open house, the media were invited to a special meeting to preview the graphics and handout materials that would be available at the open houses. Project staff also provided presentations and interviews to the media. This day-of coverage was particularly beneficial as a last-minute public reminder about the open houses. Reporters attended both of the open houses and provided late night and following day coverage. News releases summarizing the highlights of the open houses were prepared and distributed to the media following the open houses. These provided specifics about issues raised and summaries of the types of comments received at each meeting. The follow-up releases also described the next steps in the project, including upcoming public involvement activities. Media outreach is summarized in **Table 4-4**.

Information about the project was regularly provided in the following media:

Print Media

- *Grand Junction Daily Sentinel*
- *Grand Junction Free Press*
- *Business Times of Western Colorado*
- *Denver Post (Western Slope reporter)*
- *Rocky Mountain News West (reporter)*
- *River City Magazine*
- *Newcomers Magazine*
- *Fruita Times/Palisade Tribune*

Electronic Media

- *KAFM FM Public Radio*
- *KCIC Radio*
- *KEKB FM*
- *KEXO AM Cumulus Radio*
- *KISS FM*
- *KMSA Radio*
- *KNZZ AM*
- *KPRN FM Public Radio*
- *KSTR FM*
- *KREX Channel 5*
- *KJCT Channel 8*
- *KKCO Channel 9*
- *KREY Channel 10*
- *KRMJ Channel 18*

Table 4-4 Media Outreach

Activity	Date
Article in CityPage - Grand Junction Daily Sentinel	August 25, 2006
Press Release No. 1 - Public Meeting No. 1 (English/Spanish)	September 7, 2006
Press Release No. 2 - Public Meeting No. 1	September 21, 2006
Display Ads (½ page) Posted in Daily Sentinel and Free Press	September 28, 2006
Media Briefing	September 28, 2006
Press Release No. 3 - Public Meeting No. 1 Summary	October 17, 2006
Press Release No. 4 - Public Meeting No. 2	December 22, 2006
Article in CityPage - Grand Junction Daily Sentinel and Free Press	December 29, 2006
Press Release No. 5 - Public Meeting No. 2	January 17, 2007
Display Ads (½ page) Posted in Daily Sentinel and Free Press	January 23, 2007
Media Briefing	January 23 & 24, 2007
Press Release No. 6 - Public Meeting No. 2 Summary	February 6, 2007

4.2.6 Mailings and Notices

Meeting notifications and information regarding the project and its progress were mailed to property owners and businesses adjacent to the study corridor prior to each public meeting. The project contact database was developed by utilizing current tax assessor data provided by the City of Grand Junction's GIS department and supplemented by public meeting attendees and contacts who requested to be added to the mailing list through the project Web site.

Notification of the first open house held in September 2006 was included in the Right of Entry letters requesting permission to enter the owner's property and collect preliminary information associated with the EA.

In addition, approximately 200 (English/Spanish) announcements for Open House No. 1 and approximately 200 Spanish language only announcements for Open House No. 2 were distributed throughout the community and hand-delivered to various low-income and/or minority residences and businesses identified by the Project Team.

Distribution of meeting announcements (English/Spanish) were provided via the following persons and locations:

- CDOT
- City Market
- City of Grand Junction
- Downtown Development Authority
- Emerson School
- Grand Junction Chamber of Commerce
- Hispanic Grocery (Mercado)
- Larry Archuleta (Hispanic community leader)
- Latina Anglo Alliance
- Marillac Clinic c/o Diana Hunt (via Karen Sherman)
- Mesa County Library
- Mesa Mall
- Museum of the West
- Nisley Elementary parent meeting
- Orchard Mesa County Center
- Rite Aid
- Riverside Task Force
- Shiner's Car Wash
- St. Joseph's Church
- Starbucks
- Target
- WalMart

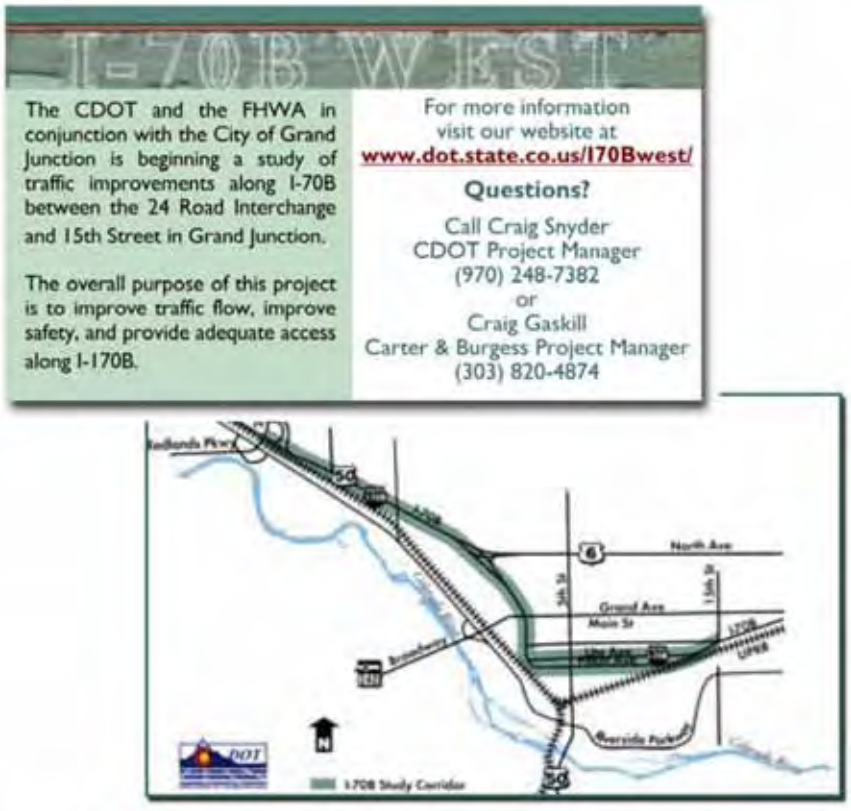
- Western Colorado Justice for Immigrants meeting
- Whitman Education Center
- Various local Mexican restaurants

4.2.6.1 Project Placards / Business Cards

Project information was provided on 8½-inch x 1-inch plastic tabletop placard signs that contained a description of the project, project Web site address, and contact information for the CDOT and Consultant Team Project Managers. In addition, 2-inch x 3½-inch business cards were developed with the same project contact information and contained a project map on the backside. The signs and business cards were distributed to various locations throughout the study corridor for display and to advertise the project. Business cards were also distributed by the Project Team during meetings with businesses and made available at each public meeting.

Placard and business card distribution locations included:

- Mesa County Library
- CDOT Region 3 - 222 South 6th Street, Room 317
- CDOT Region 3 - 606 South 9th Street
- City of Grand Junction
- Grand Junction Chamber of Commerce
- Downtown Development Authority
- Whitman Education Center
- Museum of the West
- Riverside Task Force



Project business cards were distributed to area residents and businesses to provide contact information.

4.3 COMMENTS AND RESPONSES

Various opportunities for the public to submit comments were provided from the inception of the project. All public comments were captured and recorded in a spreadsheet. Opportunities to submit comments included:

- Project Web site - www.dot.state.co.us/I70Bwest/
- Phone or fax comment to CDOT Project Manager or other consultant staff
- Comment sheet available at all public meetings
- Comment sheet mailed to CDOT Project Manager

To date, a total of 65 comments have been received through the opportunities listed above. Requested project information has been emailed or mailed to individuals. The Project Team has conducted 42 meetings with area property and business owners. All comments received by the Project Team have been addressed and all input was considered in developing the Preferred Alternative.

4.4 PUBLIC HEARING

A public hearing will be held during the 30-day public review period. The purpose of the hearing is to receive comments from the public on the I-70B West EA and the Preferred Alternative identified in the EA. Prior to the hearing, copies of the EA will be made available for public review at area libraries and agencies. Display ads in local newspapers, radio announcements, and news releases will announce the availability and location of the EA for review, and the date, time, and location of the hearing. The information will also be provided to the public through project postcards and on the Web site.

The Environmental Assessment will have a 30-day public review period. The purpose of this review period is to receive comments from interested agencies and the public on the I-70B West Preferred Alternative.

4.5 PUBLIC INVOLVEMENT ACTIVITIES SUMMARY

Table 4-5 summarizes all public involvement and specialized outreach activities provided throughout the duration of the I-70B West EA.

Table 4-5 Public Involvement Activity Summary

Public Involvement Activity	Date
Right of Entry Permission Letter	
• Permission Letter No. 1	August 18, 2006
• Permission Letter No. 2 (Follow-up)	September 18, 2006
Environmental Justice Outreach	
• Hand Distribution of Meeting No.1 Announcement (English/Spanish)	September 14 & 15, 2006
• Hand Distribution of Hispanic Meeting Announcement	November 8, 2006
• Hand Distribution of Meeting No. 2 Announcement (500ct) (English/Spanish)	January 10, 2006
Business Owner Outreach	
• (see Table 4-3)	

Table 4-5 Public Involvement Activity Summary (Continued)

Public Involvement Activity	Date
Public Meeting No. 1 at First Congregational Church	
• Editorial Boards with local media	August 2006
• Announcement mailed via ROE Letter	August 18, 2006
• Article in CityPage - Grand Junction Daily Sentinel	August 25, 2006
• Project Web site goes live	September 7, 2006
• Press Release No. 1 (English/Spanish)	September 7, 2006
• Announcement posted on project Web site	September 9, 2006
• Announcement distributed at Farmer's Market	September 14, 2006
• Announcement hand-distributed (English/Spanish) environmental justice & community	September 15, 2006
• Press Release No. 2	September 21, 2006
• Display Ads (½ page) Posted in Daily Sentinel and Free Press	September 28, 2006
• Public Meeting No. 1 at First Congregational Church- Pilgrim Hall	September 28, 2006
• Meeting materials posted on project Web site	September 28, 2006
• Media briefing	September 28, 2006
• Press Release No. 3 - Meeting Summary No.1	October 17, 2006
Spanish Language Public Meeting at St. Joseph's Catholic Church - Parish Hall	
• Announcement hand-distributed within Hispanic community	November 1-15, 2006
• Spanish Radio Public Service Announcements (PSA)	November 9-16, 2006
• Spanish Language Public Meeting at St. Joseph's Catholic Church	November 16, 2006
Public Meeting No. 2 at Two Rivers Convention Center	
• Press Release No. 4	December 22, 2006
• Article in CityPage - Grand Junction Daily Sentinel & Free Press	December 29, 2006
• Press Release No. 5	January 17, 2007
• Announcement posted on project Web site	December 29, 2006
• Announcement mailed to project contact database	January 10, 2007
• Announcement hand-distributed (English/Spanish)	January 10-15, 2007
• Display Ads (½ page) Posted in Daily Sentinel and Free Press	January 23, 2007
• Media briefing	January 23 & 24, 2007
• Meeting materials posted on project Web site	January 24, 2007
• Public Meeting No. 2 at Two Rivers Convention Center	January 24, 2007
• Press Release No. 6 - Meeting No. 2 Summary	February 6, 2007