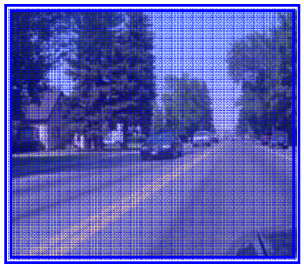
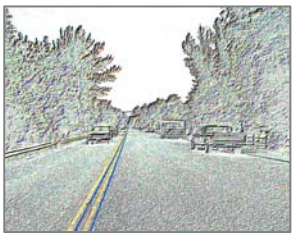
Rouse Avenue - Bozeman

STPP 86-1(27)0
CN 4805





Environmental Assessment

& Section 4(f) Evaluation

July 2008

Montana Department of Transportation
serving you with pride

U.S. Department of Transportation
Federal Highway Administration

ENVIRONMENTAL ASSESSMENT

for

STPP 86-1(30)0

Rouse Avenue - Bozeman

(CN 4805)

in

Bozeman, Montana

This document is prepared in conformance with the Montana Environmental Policy Act (MEPA) requirements and contains the information required for an Environmental Assessment under the provisions of ARM 18.2.237(2) and 18.2.239. It is also prepared in conformance with National Environmental Policy Act (NEPA) requirements for an Environmental Assessment under 23 CFR 771.119, and Section 4(f) of the U.S. Department of Transportation Act under 23 CFR 771.135.

Submitted pursuant to 42 U.S.C. 4332(2)(c), 49 U.S.C. 303, Sections 75-1-201 & 2-3-104, M.C.A.,

and Executive Orders 11990, 11988, and 12898, by the

U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION

AND THE

MONTANA DEPARTMENT OF TRANSPORTATION

Submitted by: _____ Date: 6/25/08

Montana Department of Transportation

Reviewed & Approved for Distribution: Jeffrey A Patten Date: 7/10/08

U.S. Department of Transportation
Federal Highway Administration

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Abstract: The proposed action is the reconstruction and widening of approximately 1.95 miles of Rouse Avenue/Bridger Drive from Main Street to Story Mill Road, in Bozeman. The proposed project would provide necessary safety and capacity improvements for vehicular and non-motorized travel within the corridor. The Preferred Alternative has two travel lanes, a center turn lane, bike lanes, curb/gutter, and sidewalk, as well as new traffic control at key intersections.

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Public comments on this Environmental Assessment may also be submitted at this website address.

EXECUTIVE SUMMARY

The project is located on Rouse Avenue and Bridger Drive, along Primary Route 86, an urban minor arterial in the City of Bozeman. The proposed project begins at the intersection of Rouse Avenue and Main Street and extends north approximately 1.37 miles to the intersection of Griffin Drive, where Rouse becomes Bridger Drive. The proposed project continues east on Bridger Drive approximately 0.57 miles to the intersection of Bridger Drive and Story Mill Road. The total length of the proposed action is 1.94 miles.

Purpose and Need for the Proposed Action

The purpose of the proposed project is to improve vehicular Level of Service (LOS) and enhance bike and pedestrian travel within the Rouse Avenue corridor.

The existing Rouse Avenue facility fails to meet the desirable level of service of C or better at three of the six major intersections in the corridor. Without improvements, the Level of Service will be at F at these intersections by the design year of 2030.

Pedestrian and bicycle facilities are inconsistent throughout the corridor. Sidewalks are present in the corridor, but many have deteriorating concrete, and pedestrian routes are discontinuous or nonexistent in some locations. Rouse Avenue currently does not have bicycle lanes and the paved width is inconsistent throughout the corridor.

Alternatives

The following alternatives were developed for the proposed reconstruction and widening of Rouse Avenue.

- **No Build Alternative –** provides only routine maintenance within the existing facility.
- **Alternative A** - three-lane urban section from Mainstreet to Bond and three-lane rural section from Bond to Story Mill Road
- **Alternative B** – three-lane section widened symmetrically from the centerline of the existing alignment except between Lamme and the Bozeman Creek crossing, where the alternative would be widened to the east to avoid impacts to Bozeman Creek. Alternative B is a three-lane urban section to Bond and three-lane rural section north of Bond to Story Mill Road. Alternative B incorporates the same design elements and lane widths as Alternative A.
- **Alternative C** - five-lane urban section from Main to Bond and a five-lane rural section between Bond and Story Mill Road, widened symmetrically from the existing alignment.
- **Alternative D** - three-lane urban section from Main to Bond and a three-lane rural section north of Bond. Roundabouts would be used instead of signals at intersections where signals are warranted. The center turn-lanes are interrupted by medians as they approach the roundabout intersections.

Identification of the Preliminary Preferred Alternative

Alternatives which were developed for the proposed Rouse Avenue project were evaluated based on their ability to meet the stated *Purpose and Need* and on their impacts to the surrounding environment.

Based on the comparison of impacts, and its ability to meet Purpose and Need and provide a balanced approach to the Project Goals, Alternative B refined is forwarded as the Preferred Alternative for improvements in the Rouse Avenue corridor. Under the Preferred Alternative, Rouse Avenue would follow the same alignment as Alternative B to avoid impacts to Bozeman Creek and Creekside Park, but would not include on-street parking or boulevards where impacts could be substantially reduced. The primary elements of this alternative include:

- Three-lane urban section from Main Street to the East Gallatin River crossing northeast of Griffin Drive, including two through lanes and a two-way left turn lane
- Three-lane rural section from the East Gallatin River crossing to Story Mill Road, including two through lanes and a two-way left turn lane
- On-street parking on east side of the street between Main and Mendenhall, on both sides of the street between Mendenhall and Lamme, and off-street parking north of Lamme
- Sidewalks on both sides of the roadway from Main to the East Gallatin River crossing, (a shared pedestrian/bicycle path would be constructed on the north from the river crossing to Story Mill, but the path on the south would be provided by others concurrent with development of those parcels – See Bicycle and Pedestrian Concerns in Chapter 3 for a more detailed discussion)
- Bike lanes on both sides of the roadway from Mendenhall to Story Mill Road
- Boulevard from Mendenhall to Griffin Street, except between Lamme and the Bozeman Creek crossing where boulevards are eliminated to avoid impacts to Bozeman Creek
- Side-street improvements at intersections to accommodate turning movements

Impacts and Mitigation Summary

If the proposed project is approved, the following mitigation measures will be implemented through contract specifications or special provisions:

Land Use / Right-of-Way and Easements / Utilities

Impacts

While the Preferred Alternative is consistent with all current zoning and planning documents, the proposed project would impact four Section 4(f) properties. The proposed improvements would require the relocation of two structures because of widening necessary to improve the intersection capacity at Peach. Two other properties would be affected because the Preferred Alternative would encroach on those properties, though the proposed construction limits may not impact the building themselves.

Mitigation

No mitigation is required for general land use issues.

Farmlands

Impacts

No analysis of farmlands impacts was necessary since this project lies entirely within the urban built-up area of Bozeman.

Mitigation

No mitigation is required.

Social

Impacts

The Preferred Alternative is expected to have no effect on population growth, demographic composition, or income levels. It is anticipated to improve travel and access.

Mitigation

No mitigation is required.

Right-of-Way, Easements, and Relocations

Impacts

Right-of-Way would be required throughout much of the corridor to accommodate the proposed improvements. Approximately 1.4 acres of new right-of way would be required which consists of 78 parcels on both sides of the existing alignment. Acquisition of at least two residences and one business would be required under the Preferred Alternative due to direct conflicts between the proposed construction limits and the existing structures. A number of utilities have been identified within this corridor that may be impacted by the new right-of-way limits. These include city water and sewer, electric and telecommunications transmission lines, natural gas and petroleum pipelines, and cable television lines.

Mitigation

All lands needed for right-of-way under the proposed action which are private ownership would be acquired in accordance with both the *Uniform Relocation Assistance and Real Property Acquisition Act* of 1970 and the *Uniform Relocation Act Amendments* of 1987. Any utility relocation would be coordinated with the lines' owners, and done prior to this proposed project's construction. Notifications of service interruptions due to these relocations would be the responsibility of the utility lines' owners.

Economic Conditions

Impacts

Overall, the proposed action would have a positive impact on the area's economic conditions.

Mitigation

No mitigation is required.

Environmental Justice

Impacts

According to Census data, areas along the Rouse Avenue corridor are characterized by lower incomes, lower rates of homeownership, and older and less valuable housing stock.

Mitigation

The proposed right-of-way acquisitions do not appear to be either low-income or minority owned/occupied properties. Due to the limited number of acquisitions and the nature of these homes and businesses, both the No-Build Alternative and the Build Alternatives would not create disproportionately high and/or adverse impacts on the health or environment of minority and/or low-income populations.

Air Quality

Impacts

It is expected that there would be no appreciable difference in overall MSAT emissions between the alternatives. Overall, the EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause MSAT levels to be substantially lower than today.

Mitigation

No mitigation is required.

Pedestrians and Bicyclists

Impacts

The Preferred Alternative would improve access for pedestrians and bicyclists throughout the corridor through the provision of bike lanes and ADA accessible sidewalks throughout the corridor.

Mitigation

No mitigation is required.

Noise

Impacts

Traffic noise impacts are anticipated at seven receptors under the No Build Alternative and at 13 receptors under the Preferred Alternative.

Mitigation

Traffic noise abatements measures were considered, including modification of the Preferred Alternative, traffic management measures, construction of noise barriers, and the use of quiet pavements. These mitigation measures are not practical or effective for the Rouse Avenue corridor.

Water Quality

Impacts

The East Gallatin River is the discharge body for storm water and is currently on the DEQ's 303(d) list of impaired or threatened waters. The increase in the total surface area of paved road

related to widening and reconstruction will increase the rate and quantity of surface water runoff from the roadway.

Mitigation

Storm water systems design for the Preferred Alternative would use Best Management Practices to treat storm water before it enters the East Gallatin River.

Wetlands

Impacts

There are no wetlands within the project area. Bozeman Creek is a perennial "Water of the U.S." as a result of its connection to the East Gallatin River.

Mitigation

No mitigation is required because there are no wetlands within the project site.

Floodplains

Impacts

MDT and the City of Bozeman are currently discussing design options for future water conveyance structures that would improve overall hydraulic function to reduce flood risk. The Preferred Alternative would have no detrimental impact on the flood risk.

Mitigation

Existing hydraulic conditions would be maintained or improved throughout the corridor through the installation of new conveyance structures agreed upon by MDT and the City of Bozeman, and in coordination with resource agencies. Floodplain Development Permit would be required and is available from the City of Bozeman.

Waterbodies, Wildlife Resources, and Habitat

Impacts

There would be minimal impact to wildlife in the area of study based on availability of adjacent habitat.

Mitigation

To prevent direct impacts in the taking of migratory birds, nestlings, or eggs, it is recommended that tree removal occur before or after the nesting season. In order to avoid impacts to spawning fish, fish passage will be maintained and in-stream timing restrictions may recommended by

MFWP. All construction activities are required to comply with the Montana Noxious Weed Law and follow the requirements of the Noxious Weed Management Act.

Threatened/Endangered (T/E) Species

Impacts

The MNHP database reports, threatened, endangered, or proposed plant or animal species do not exist within the Rouse Avenue study area.

Mitigation

No mitigation is required.

Hazardous Wastes

Impacts

Several LUST sites were identified with in the study area. There is one active site within the corridor which had a well reading above water quality standards benzene. Construction activities on Oak Street, immediately north of the MDT property, yielded soil samples that contained chromium.

Mitigation

A field engineer will be on-site and observe excavations adjacent to the sites of concern in case any contaminated soils are encountered. Special provisions would be written into the construction contract for the proposed project to address handling of contaminated material in the event it is encountered. Additionally, petroleum resistant pipe materials would be utilized in areas where contamination is encountered, as recommended by the Montana DEQ.

Cultural/Archaeological/Historic Resources

Impacts

There are a total of 11 historic sites in the Rouse Avenue Corridor. Three of these sites are potentially eligible for listing on the NRHP as individual sites. Two other sites within the corridor were previously listed.

Mitigation

Sites that are recommended NRHP eligible have been avoided wherever possible. MDT also proposes to delineate the boundaries of the North Rouse Historic District and contribute $5,000 to the Bozeman Historic Preservation Office to prepare documentation for the nomination of the historic district to the NRHP.

Visual

Impacts

Visual impacts in the corridor include a wider roadway and the removal of some mature vegetation parallel to the roadway. Nearly 100 vegetation species and over 30 tree species were identified and inventoried within the corridor. The Preferred Alternative would require construction disturbance and/or new right-of-way of varying widths throughout the corridor. This disturbance area varies between 15 and 30 feet on either side of the existing transportation facilities. It is not possible to identify impacts to specific trees until more detailed plans are developed; however, it is estimated that over 125 trees could be impacted directly due to the construction activities associated with the Preferred Alternative.

Mitigation

The proposed project is anticipated to have an overall positive effect on the visual character of the corridor through the construction of landscaped boulevards through the residential portions; however, there will be a notable loss of large tree cover in the immediate vicinity of the existing roadway. The City of Bozeman's arborist would be consulted during preliminary engineering to evaluate the condition of existing trees and ensure that appropriate consideration is given to trees and reasonable measures are taken to minimize impacts to these resources. The arborist would also be asked to propose potential mitigation strategies for unavoidable impacts to trees within the corridor. According to a June 2006 phone conversation with Elizabeth Galli-Noble, who represents the Bozeman Tree Board, the Board would like to work with MDT to ensure that trees are replanted within the corridor post-construction. The Tree Board has offered to write grants to partially fund the cost of the replanting. To that end, the Tree Board has asked to be kept apprised of project development progress, in advance of construction, to have time to write grants for tree-planting.

Construction

Impacts

Construction activities from the proposed Build Alternatives would cause temporary inconveniences to area residents and businesses. These would occasionally result in longer travel times, detours, temporary closures, and noise and dust due to the use of heavy machinery. These disruptions would occur intermittently throughout the construction period. The existing roadway would remain in use for continued access during the construction process; therefore, traffic interruptions would be minimized.

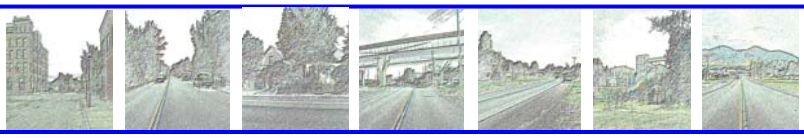
Mitigation

Asphalt plants and gravel crushers that may be required for roadway construction for any of the alternatives would require air quality permits to be obtained by the contractor. Construction activities are also required to use dust suppression and control measures to minimize short-term impacts related to construction dust.

There would be minor, temporary noise impacts related to construction of any of the alternatives. The project's contractor would be subject to all state and local laws to minimize construction noise by having mufflers on all equipment. Dust control would also be implemented by using either water, or another approved dust-suppressant. During construction, surface water runoff could be contaminated by spills of petroleum products, lubricants, and hydraulic fluid from construction equipment. There would be a spill prevention and emergency containment plan made to provide for mitigation of any impacts related to such spills. In general, BMP's would be used to minimize the effect of sedimentation and/or run-off during the roadway construction periods.

There is potential for short-term water quality impacts due to increased erosion and sedimentation during construction activities. Mitigation of these impacts is achieved through engineering controls, such as grading, revegetation, and various BMP's. These mitigation measures would be included in the Storm Water Pollution Prevention Plan (SWPPP) to ensure that any impacts are minimal. Field monitoring/oversight would be planned.

Given the volume of traffic and the fully developed residential, retail, and commercial areas along this route, MDT will require a staging and construction sequencing plan to ensure that reasonable access is maintained to all residents and businesses during construction. All advance warning and detour signing would be in accordance with the Manual on Uniform Traffic Control Devices. Therefore, construction impacts from any of the proposed Build Alternatives would be minimized.



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List of Supporting Technical Reports

Alignment and Grade Traffic Plans, Rouse Avenue – Bozeman, HKM Engineering Inc., October 2006

Biological Resource Report for Rouse Avenue Bozeman, Land and Water Consulting, December 2005 (Revised and re-submitted by HKM Engineering February 2006)

Bozeman Creek Crossing Type Selection Report, Rouse Avenue – Bozeman, HKM Engineering Inc., October 2006

Cultural Resource Inventory – North Rouse Avenue, Renewable Technologies Incorporated, April 2006

Initial Site Assessment for Hazardous Materials, Noise & Air, HKM Engineering Inc., December 2005

Preliminary Hydraulics Report, Rouse Avenue – Bozeman, HKM Engineering Inc., November 2006

Preliminary Traffic Engineering Report, Rouse Avenue – Bozeman, HKM Engineering Inc., December 2005

Roundabout Operational Analysis, Rouse Avenue – Bozeman, HKM Engineering Inc., July 2006

Signal Warrant Analysis, Rouse Avenue – Bozeman, HKM Engineering Inc., July 2006

Traffic Noise Study – Rouse Avenue Bozeman, Big Sky Acoustics, November 2006

Copies of these reports are available for review at the MDT Bozeman Area Office at:

Montana Department of Transportation
907 North Rouse Avenue
PO Box 1110
Bozeman, MT 58771-1110
Phone: (406) 556-4700 / TTY: (800) 335-7592

Abbreviations and Acronyms

± ..... Approximately
ac ..... acre(s)
ACHP ..... Advisory Council on Historic Preservation
ADA ..... Americans with Disabilities Act
BMP ..... Best Management Practice(s)
BRR ..... Biological Resource Report
CADD ..... Computer Aided Design and Drafting
COE ..... U.S. Army Corps of Engineers
DEQ ..... Department of Environmental Quality
DNRC ..... Department of Natural Resources and Conservation
EA ..... Environmental Assessment
EPA ..... Environmental Protection Agency
ESA ..... Endangered Species Act
ft ..... foot (feet)
FHWA ..... Federal Highway Administration
Hwy ..... Highway(s)
LOS ..... Level of Service
mi ..... mile(s)
MDT ..... Montana Department of Transportation
MFWP ..... Montana Fish, Wildlife, and Parks
MNHP ..... Montana Natural Heritage Program
MPDES ..... Montana Pollutant Discharge Elimination System
MRIS ..... Montana Rivers Information System
MSATs ..... Mobile Source Air Toxics
NRCS ..... Natural Resources Conservation Service
NRHP ..... National Register of Historic Places
SHPO ..... State Historic Preservation Office
SPA ..... Stream Protection Act
T/E ..... Threatened and Endangered
USFWS ..... United States Fish and Wildlife Service
USGS ..... United States Geological Survey

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1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

This chapter provides a summary description of the project area and the proposed action by the Montana Department of Transportation (MDT) and the Federal Highway Administration (FHWA). This chapter also provides a definition of the specific purpose of the proposed project and the need for the proposed improvements.

1.1 Proposed Action

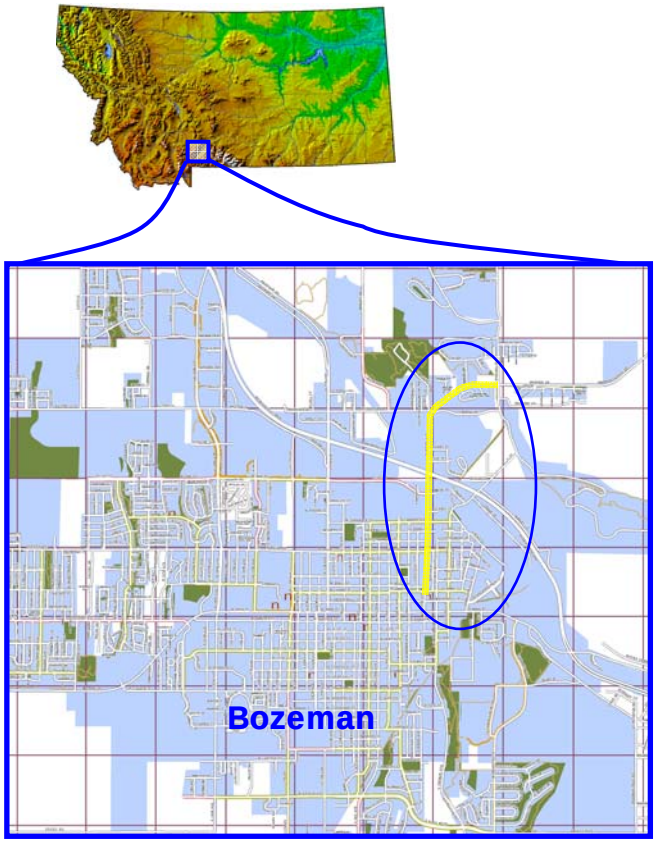
The proposed action is a capacity improvement project on Rouse Avenue and a portion of Bridger Drive within the City of Bozeman. The work would include widening of the roadway, turn-bays at major intersections, boulevards, sidewalks, handicap-accessible ramps, curb and gutter, signing and pavement markings, and facilities for pedestrians and bicyclists.

1.2 Project Area Description

As illustrated in Figure 1-1, the proposed project is located in Gallatin County, in the northeastern portion of the City of Bozeman, within the following legal description:

Township(s)	Range	Section(s)
2 S	6 E	7
1 S	6 E	31

Figure 1-1
Project Location Map



As further illustrated in Figure 1-2, the proposed project is located on Rouse Avenue and Bridger Drive, along Primary Route 86 (P-86) in Bozeman, an MDT urban minor arterial. The proposed project begins at the intersection of Rouse Avenue and Main Street (P-50) at Mile Post 0.00 and extends north approximately 1.37 miles on Rouse Avenue to the intersection of Griffin Drive, where Rouse becomes Bridger Drive. The proposed project then continues east on Bridger Drive approximately 0.57 miles to the intersection of Bridger Drive and Story Mill Road at MP 1.94 for a total project length of approximately 1.94 miles.

The proposed project is contained entirely within the Bozeman City Limits.

1.3 Purpose of the Proposed Action

The purpose of the proposed project is to improve vehicular Level of Service (LOS) and enhance bike and pedestrian travel within the Rouse Avenue corridor.

1.4 Need for the Proposed Action

The need for a project is generally established through an examination of such characteristics as capacity and forecast travel demand, accident history, lack of roadway network linkages, or outdated design features. The following categories, outlined in FHWA guidance, apply to issues or characteristics present in the Rouse Avenue corridor which point to a need for improvements. As described below, roadway capacity and pedestrian/bicycle routes can be accommodated in a variety of ways, but Rouse Avenue is particularly important in fulfilling these needs in Bozeman due to its continuous north-south link through this portion of the community.

Figure 1-2
Proposed Project Limits

Current and Projected Level of Service

Traffic conditions on transportation facilities are commonly defined using the LOS concept. The *Highway Capacity Manual* (HCM) defines LOS based on average travel speed, percent time delay, intersection delay, and capacity utilization to provide a qualitative assessment of the driver's experience. As shown in Figure 1-3, six LOS categories ranging from A to F are used to describe traffic operations. LOS A represents the best conditions and LOS F represents the worst. The existing facility does not provide adequate capacity to accommodate current traffic volumes during peak periods. If no improvements are made, traffic congestion in the corridor will worsen and the peak periods (or

morning and evening rush hours) will extend in duration by the year 2030. In particular, intersection operations on Rouse Avenue are anticipated to degrade to LOS F, meaning drivers will experience substantial delays at these locations. Rouse Avenue will not be capable of accommodating increased traffic volumes in the future without intersection improvements which may include signals, roundabouts, and/or turn lanes at many locations.

As illustrated in Figure 1-3, the Rouse Avenue facility currently fails to meet desirable (C or better) LOS at three of six major study intersections. Without improvements, the LOS will be at F at these six intersections in the corridor within the design year of 2030.

Figure 1-3
LOS Definitions and Characteristics in the Rouse Avenue Corridor

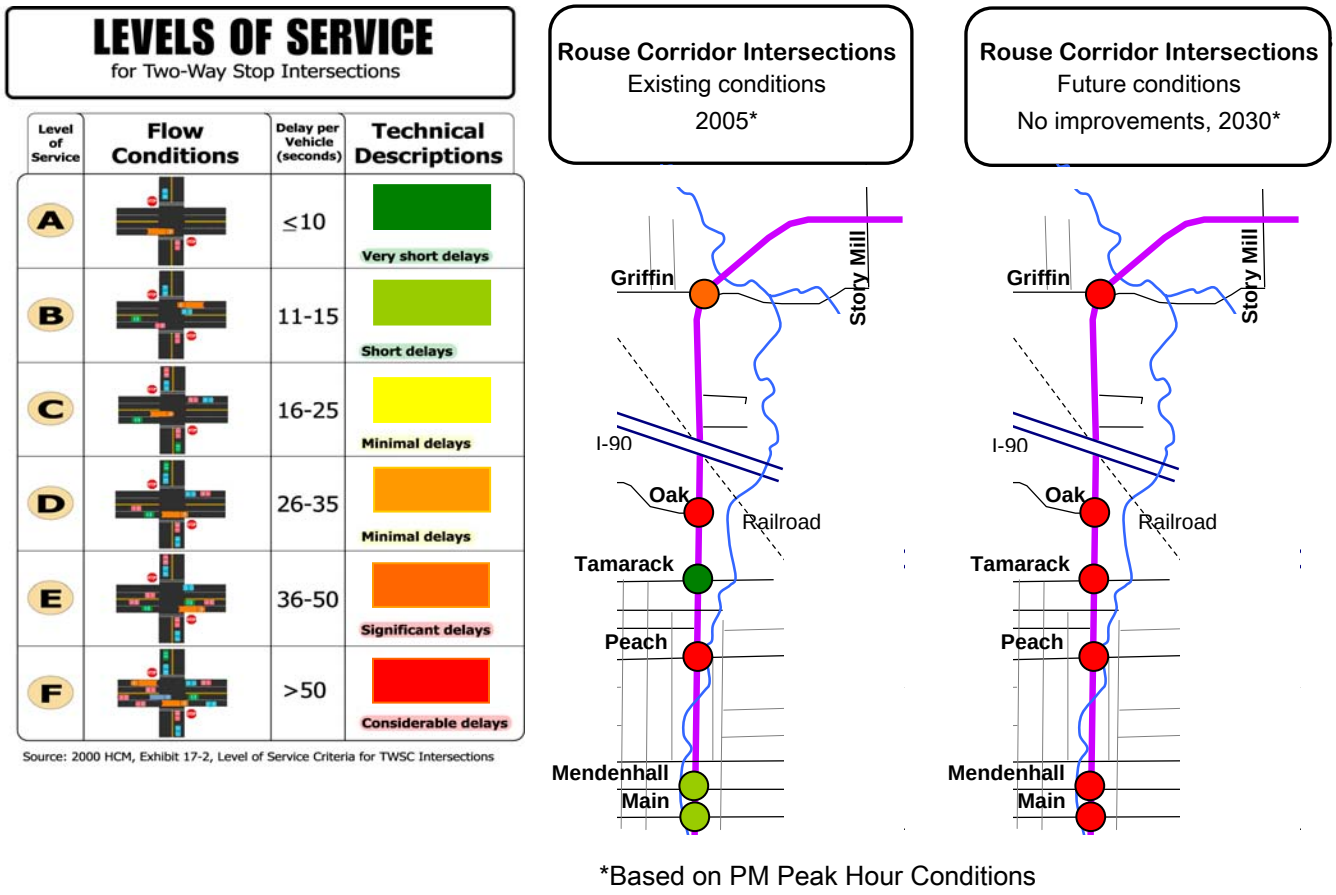
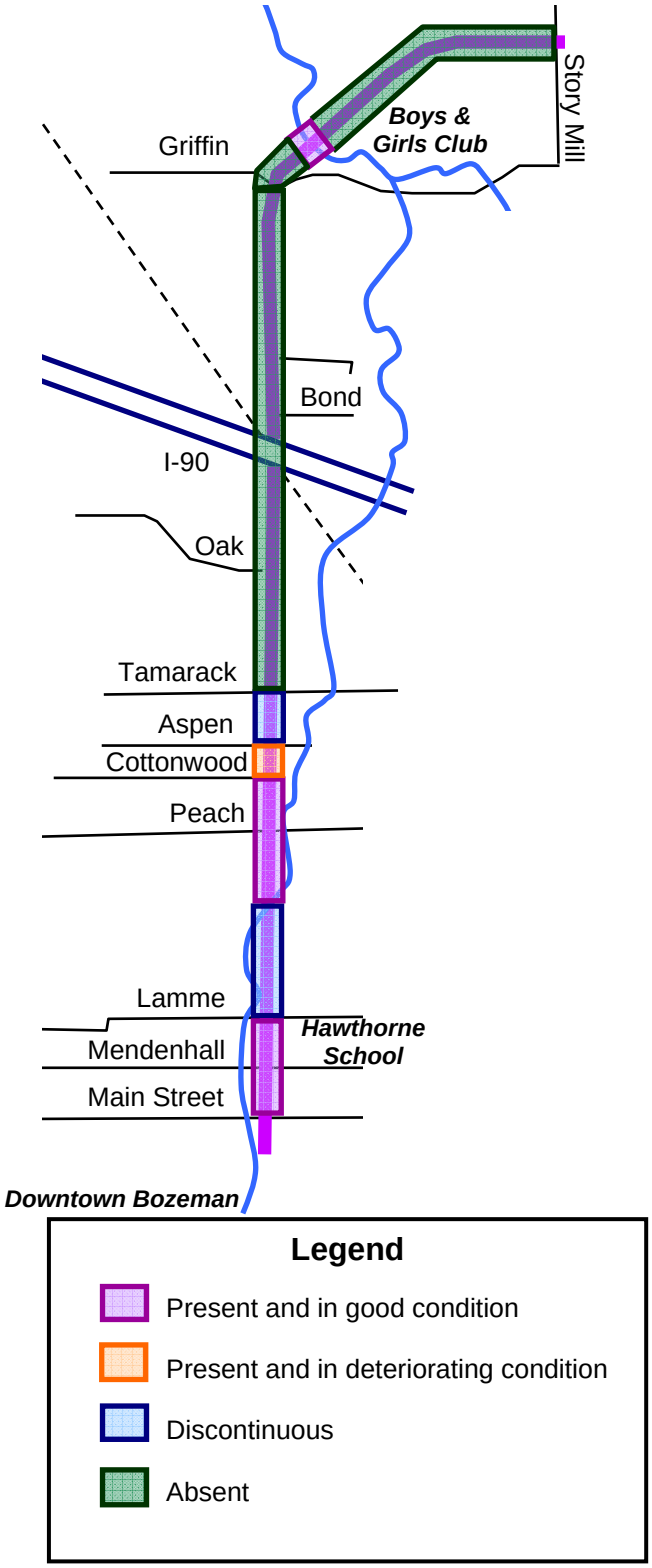


Figure 1-4
Overview of Sidewalk Conditions in the Rouse Avenue Corridor



Pedestrian and Bicycle Facilities

Rouse Avenue is currently used by pedestrians, including school-aged children walking to/from Hawthorne School; visitors to the Boys and Girls Club in the north end of the corridor; and residents traveling between the downtown business area and their homes. Current pedestrian facilities are, however, inconsistent throughout the corridor. Sidewalks are present and in good condition in some locations, the sidewalks have deteriorating concrete (i.e., cracking, crumbling, or uneven) in others, and pedestrian routes are discontinuous or nonexistent in other locations. These facilities do not meet the current requirements of the Americans with Disabilities Act (ADA). This poor condition, inaccessibility, and inconsistency in the route discourages pedestrian travel or requires that they travel on the roadway in several portions of the corridor. Sidewalk conditions are illustrated in Figure 1-4, and pictured in Photo 1-1.

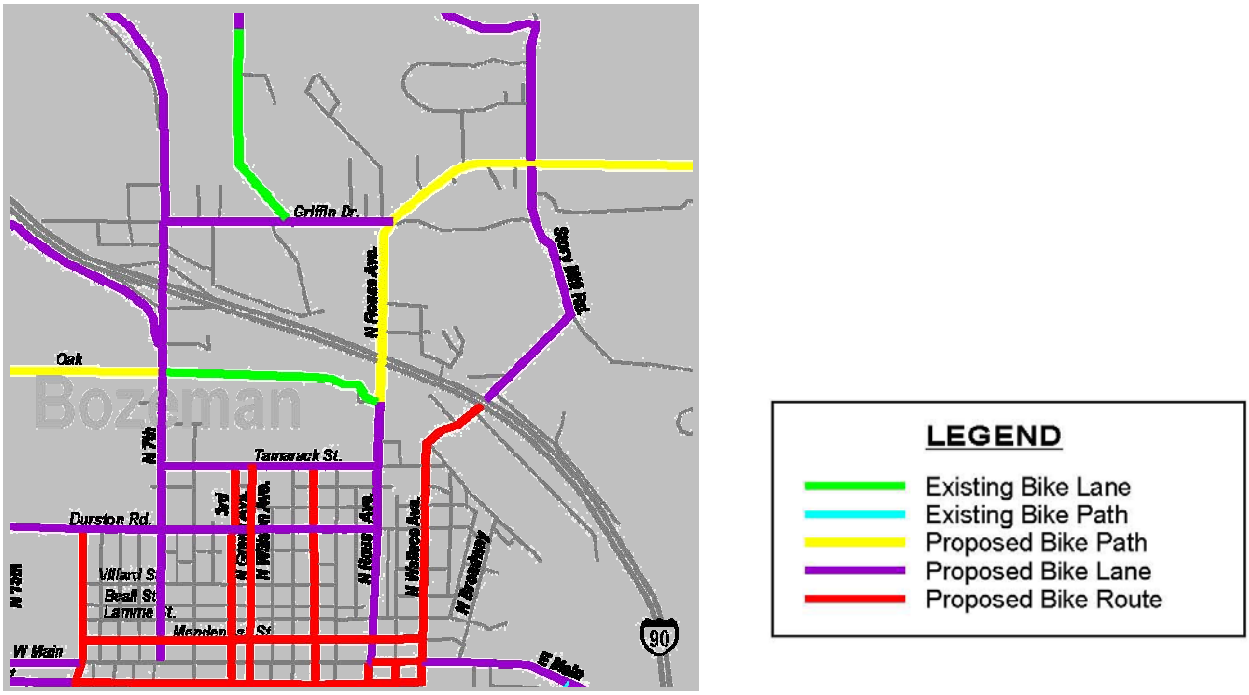
Photo 1-1
Discontinuous sidewalk along Rouse

Rouse Avenue does not currently have bicycle lanes, and the paved width is inconsistent throughout the corridor. The paved roadway width ranges from approximately 36 to 61 feet, averaging about 40 feet throughout the corridor. Varying lane widths may cause bicyclists to ride in traffic. In addition, public comments expressed concern over the uneven pavement near the railroad tracks.

The *City of Bozeman Bicycle Map* notes that the section of Rouse Avenue between Tamarack and Griffin is classified as "Bicyclists Use Caution" and signage alerts motorists to bicycle travel. This signage is shown in Photo 1-2. The *Greater Bozeman Area Transportation Plan Year 2001 Update* notes that the portion of Rouse Avenue between Main and Oak is "proposed [for a] bike lane" and the portion of Rouse Avenue north of Oak is "proposed [for a] bike path," as noted in Figure 1-5. A bike lane is a portion of the roadway that is designated for bicycle use. A bike path is a separated path designated for use by bicycles.

Photo 1-2
Signage on Rouse Alerting Motorists of Bicycle Use

Figure 1-5
Bozeman Bicycle Route Map



Source: Greater Bozeman Area Transportation Plan, 2001

1.5 Project Opportunities and Goals

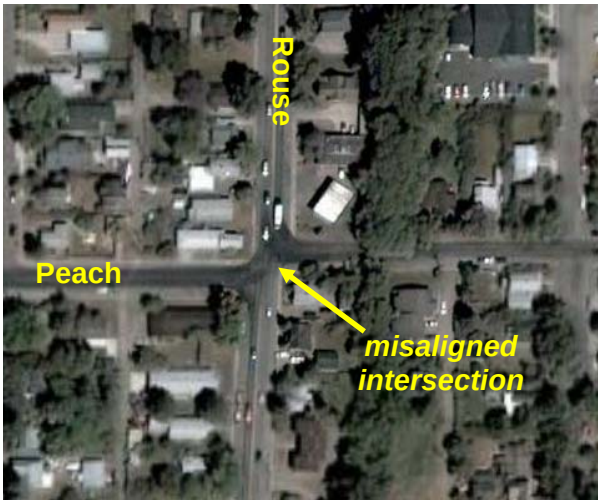
Through the scoping process, MDT gathered input from regulatory agencies and public participants to establish the criteria to be used to develop and evaluate alternatives that meet the stated purpose and need for the proposed project. During public meetings held in January and May of 2006, public participants expressed concern about the potential width of the proposed roadway. They expressed a desire for better travel conditions for vehicles, a designated route for bicycle travelers, and better amenities for pedestrians but did not want to create a roadway that would encourage higher speeds or require substantial amounts of new right-of-way and relocation of homes and businesses. These values, or criteria, were then used to develop the following Project Goals.

- Maintain community character
- Minimize impacts to community facilities and resources
- Accommodate residential parking needs
- Integrate flexibility in project design criteria

These goals are discussed in more detail in the following sections, and are used in Chapter 2 to provide balance in the selection of transportation amenities included in the Preferred Alternative.

In addition to fulfilling the goals stated above, a build alternative on Rouse Avenue could provide additional opportunities to improve system linkage and correct geometric deficiencies in the corridor.

Figure 1-6
Misaligned Intersection at Rouse and Peach



System Linkage

As depicted in Figures 1-1 and 1-2, Rouse Avenue is the only continuous route in the northeastern portion of Bozeman, and serves as one of only three continuous north-south routes in the entire city.

Rouse Avenue serves both local traffic accessing neighboring residential and business areas, as well as regional traffic accessing downtown Bozeman, Bridger Canyon, and the Bridger Bowl Ski Area.

Geometric Deficiencies

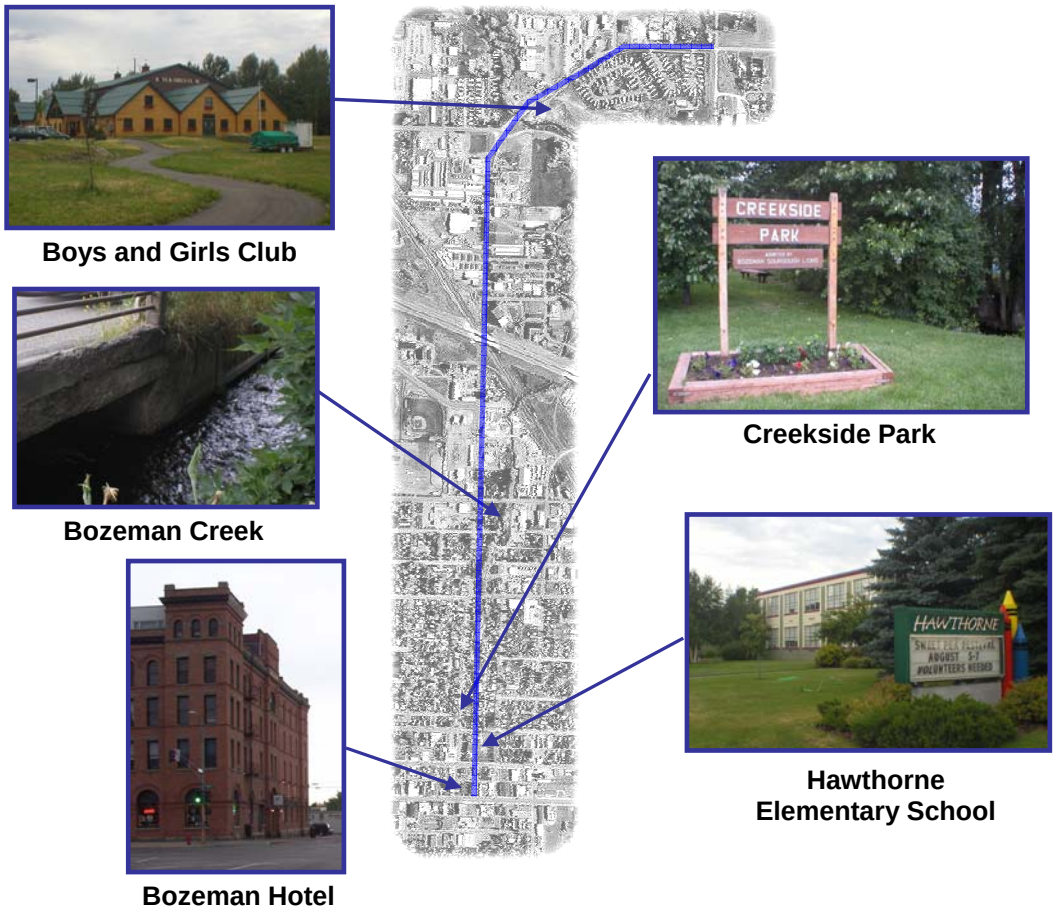
The intersection of Rouse Avenue and Peach Street is misaligned, as shown in Figure 1-6, and should be corrected if improvements are made in this corridor. Correction of this intersection is desirable due to the potential safety concerns associated with increased traffic volumes and turning movement conflicts at this intersection through the design year.

Maintain community character. As depicted in Figure 1-7, the Rouse Avenue corridor extends from the downtown commercial/municipal district, through an established residential area, then transitions into a light industrial and commercial zone near the Interstate. New residential developments are planned or underway in the northeastern portion of the project area between Griffin and Story Mill as the corridor becomes otherwise more rural in nature. These various land use types and the trips those uses generate along the same corridor make defining a unifying character very difficult. Most public participants recognize the regional importance of the Rouse Avenue corridor and that it serves local residential needs, provides area-wide business access, and serves as the sole access for residents and recreational users of the Bridger Canyon area. A balanced goal to maintain the community character of the entire corridor would best be accomplished by limiting the vehicular footprint in the residential section while providing amenities for other modes of transportation such as sidewalks and bicycle lanes and buffering the residential areas with landscaped boulevards.

Minimize impacts to community facilities and resources. As depicted in Figure 1-8, there are a number of community amenities within the corridor, including Hawthorne Elementary School, the Boys and Girls Club, Bozeman Creek, Creekside Park, and the historic Bozeman Hotel. A great deal of concern was raised over the safety of children walking to/from Hawthorne Elementary School along or across Rouse Avenue. A specific project goal would be to ensure that measures are taken to provide safe sidewalks and crossings for school-age children in the proximity of Hawthorne Elementary School and the Boys and Girls Club. The community also expressed a desire to avoid impacts to Bozeman Creek, Creekside Park, and historic structures such as the Bozeman Hotel.

Figure 1-7
Existing Community Character

Figure 1-8
Community Resources in the Rouse Avenue Corridor



Accommodate residential parking needs. Widening the roadway for more vehicular capacity, bike lanes, or sidewalks while attempting to minimize impacts to adjacent land uses means some of these transportation amenities may have to be reduced or eliminated from further consideration. On-street parking is often eliminated in downtown areas to provide more through-street capacity. During project scoping, Rouse Avenue residents in the southern portion of the corridor expressed a preference for on-street parking, especially where residents do not have driveways, alley access, or other off-street parking options. At the May 2006 public meeting, attendees were asked to rank the importance of parking, bike lanes, protection of Bozeman Creek, and any other concerns they may hold in higher priority. Parking was not listed as a top priority by any of the respondents to the informal survey, but often ranked second. Given the relative importance as expressed by the public, and the realistic need to provide parking for adjacent residences, creative solutions for these parking needs would need to be evaluated with any proposed improvements.

Integrate Flexibility in Project Design Criteria. As a State Primary route, Rouse Avenue must meet certain design criteria if substantive improvements are to be made. MDT's design guidelines for this type of route include the following minimum widths:

- 11-foot travel-lane widths
- 11-foot turn-lane widths
- 10-foot parking-lane widths
- 5-foot bike lane widths

Flexibility in these guidelines is acceptable under certain circumstances. In this case, MDT has noted two specific deviations:

1- MDT's Urban Design Guidelines allow for an eight-foot (8') parking-lane width when this lane is not anticipated to be a travel lane and there is an adjacent bike lane. Having met these criteria with the proposed improvements, a design except would be required from MDT for the Rouse Avenue project.

2- The 11-foot center turn lane width is a minimum requirement, but not highly desirable by MDT. In the northern portion of the corridor, where more right-of-way is available, MDT would prefer to construct a 12-foot center turn lane. All build alternatives thus include 11 foot turn lanes in the southerly portion of the corridor, and 12 foot turn lanes in the northerly portion of the corridor.

The *Design Standards and Specifications Policy* adopted by the City of Bozeman does not specify any dimensions, and indicates that right-of-way and back-of-curb to back-of-curb street width will be determined on a case by case basis. The City does, however, require five foot (5') sidewalks on their principal arterials. While no standard width is identified, the City also requires boulevards on principal arterials to provide space for snow storage and separation of pedestrians and vehicles. The boulevards also provide space for trees and other forms of corridor landscaping, which the City considers as an essential ingredient to producing a livable community. The *Transportation Plan* also identifies the need for bike lanes on both sides of the road.

Due to public concern, MDT and the City of Bozeman have agreed to be flexible in these standards in an attempt to accommodate all of the desired amenities while minimizing impacts. Where safe and prudent, the minimum standards would be applied to the final design to minimize impacts to the surrounding area.

All of the above design considerations, opportunities, and goals for meeting and enhancing the general character of the corridor are carried forward in Chapter 2 as screening (or evaluation) criteria for all alternatives that fully satisfy the basic need of improved Level of Service and enhanced bicycle and pedestrian mobility in the corridor.

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2.0 ALTERNATIVES

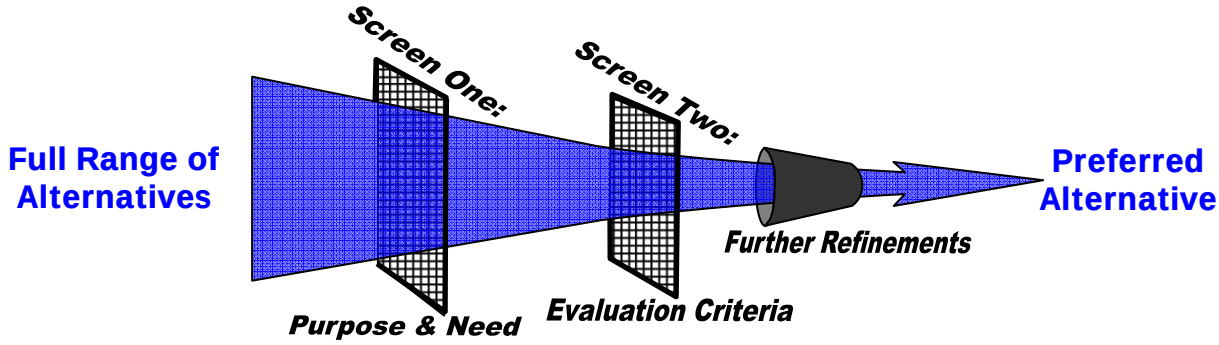
This chapter describes the alternatives that were developed for the proposed Rouse Avenue project, explains which ones were retained based on their ability to meet the stated Purpose and Need, and describes alternatives that were determined to be "reasonable" due to their sensitivity to the surrounding built and natural environments.

2.1 Development of Alternatives

Through public involvement activities and interdisciplinary coordination with federal, state, and local transportation officials and resource agencies, a number of alternatives were developed and analyzed for their operational benefits and general impacts to the surrounding built and natural environment. According to the stated Purpose and Need for the proposed project, alternatives were developed to provide increased capacity for vehicle travel, and an enhanced corridor for bicycle and pedestrian travel. Once an alternative appeared to satisfy the basic Purpose and Need, it was further reviewed in the context of the design guidelines and the opportunities and goals established from public input. For an alternative to be considered reasonable, it needed to meet Purpose and Need, then show sensitivity to the surrounding community character and minimize impacts to those elements identified as important to the community.

In addition to the No-Build Alternative, four Build Alternatives were initially developed (Alternatives A, B, C, and D). Figure 2-1 below depicts how the broad range of initial alternatives was screened, or evaluated, through two levels. Remaining alternatives were then further refined to identify the Preferred Alternative. As described in the following sections, some of the alternatives failed to meet Purpose and Need, and did not progress past Screen One; and none of the remaining alternatives fully satisfied the evaluation criteria in Screen Two. Those that best satisfied the evaluation criteria were further refined into a single alternative which is presented at the end of this chapter as the Preferred Alternative.

Figure 2-1
Alternatives Development and Screening Process



The following sections provide a detailed description of each alternative initially considered for this proposed project, then discuss the screening process outlined above.

The **No-Build Alternative** would essentially maintain the existing conditions along the entire length of the project corridor by providing routine maintenance. There would be no improvement in vehicular capacity, no improvements to the existing sidewalks, no provision of bicycle facilities, and no opportunity for other geometric improvements in the corridor. This alternative does not meet the stated Purpose and Need, but it is carried forward as a baseline for comparative analysis and as a viable option if the impacts appear to outweigh the benefits of the proposed project.

Alternative A is a three-lane urban section from Main Street to Bond Street, and a three-lane rural section from Bond north to Story Mill Road, widened symmetrically from the centerline of the existing alignment.

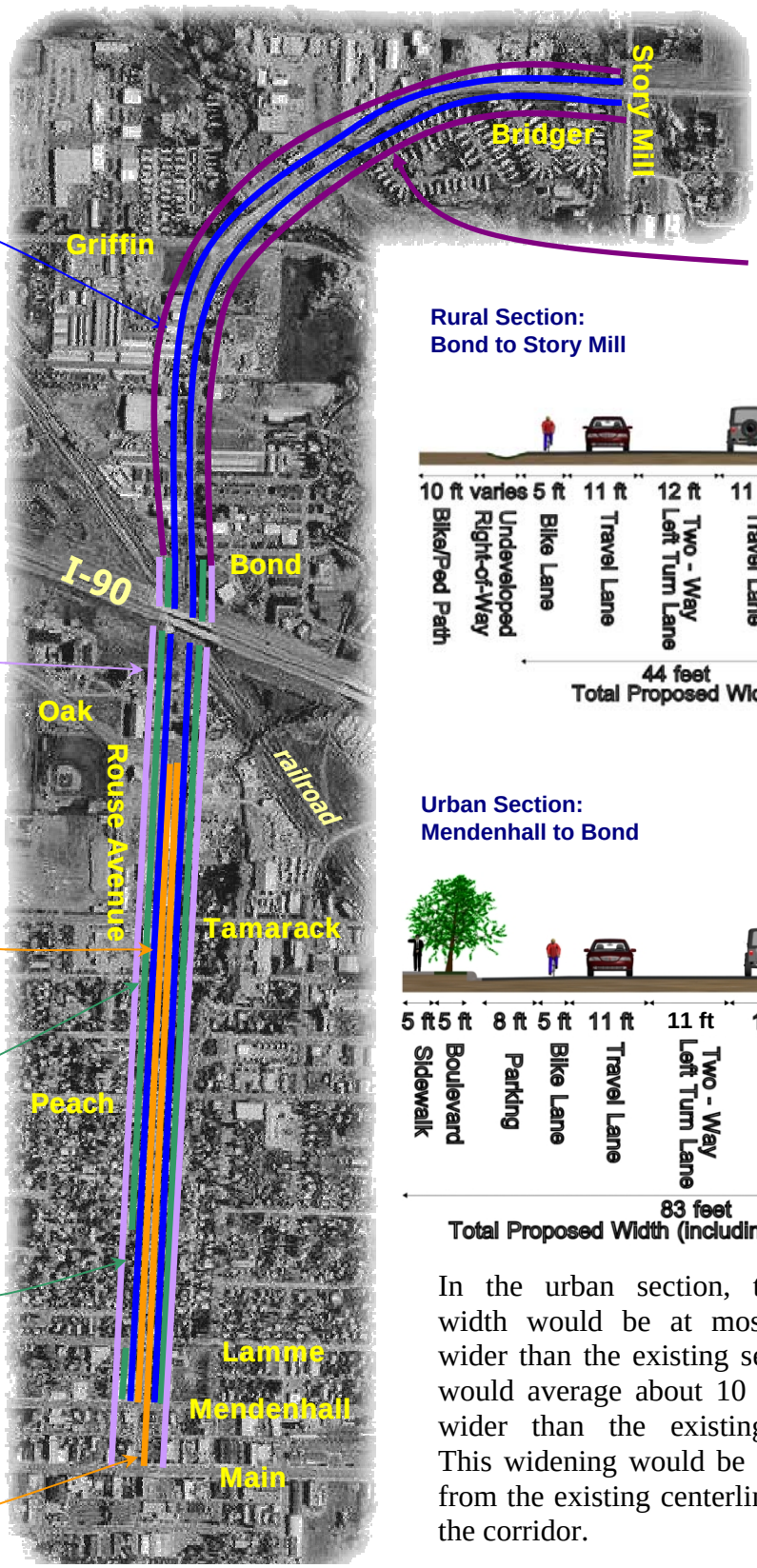
The primary elements of Alternative A include:

- Reconstruction of Rouse Avenue between Main Street and Mendenhall Street within existing right-of-way limits.
- Three-lane urban section from Main Street to Bond Street, including two through lanes and a two-way left turn lane
- Three-lane rural section from Bond Street to Story Mill Road, including two through lanes and a two-way left turn lane
- Parking lanes on the east side of the roadway from Main Street to Mendenhall Street and on both sides of the roadway from Mendenhall Street to Oak Street
- Sidewalks on both sides of the roadway from Main to Bond Street, and a shared pedestrian/bicycle path on both sides of the road from Bond Street to Story Mill Road.
- Bike lanes on both sides of the roadway from Mendenhall to Story Mill Road
- Boulevard on both sides of the roadway from Mendenhall Street to Bond Street, except between Lamme Street and the location where Bozeman Creek crosses Rouse Avenue, where boulevards are only included on the east side of the street
- Side-street improvements at intersections to accommodate turning movements

Figure 2-2 illustrates the primary elements of Alternative A, and the differences between the urban and rural sections.

Figure 2-2
Primary Elements for Alternative A

(3-lane, widened symmetrically)



Bike Lanes proposed on both sides from Mendenhall to Story Mill.

Shared Bicycle/ Pedestrian paths proposed on both sides from Bond to Story Mill.

Sidewalks proposed on both sides from Main to Bond.

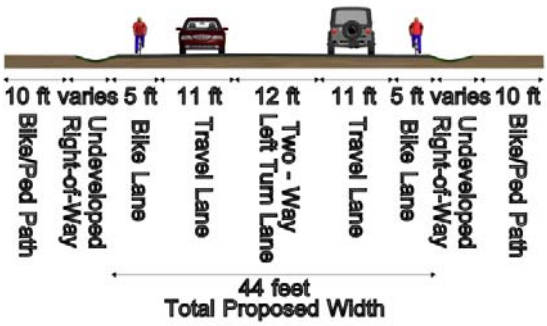
Parking proposed on both sides from Mendenhall to Oak.

Boulevards proposed on both sides from Mendenhall to Bond, except as noted below.

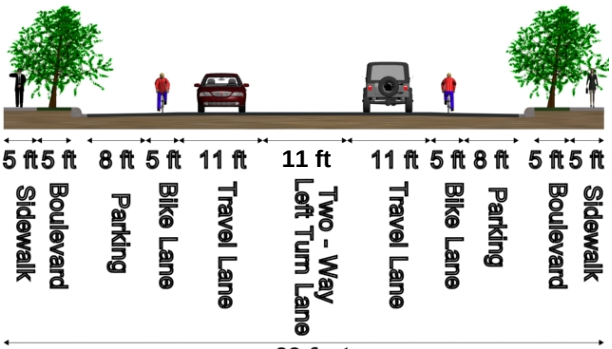
Boulevards eliminated on west side due to narrow corridor between Lamme and Bozeman Creek crossing.

Parking proposed on east side only from Main to Mendenhall.

Rural Section:
Bond to Story Mill



Urban Section:
Mendenhall to Bond



In the urban section, the paved width would be at most 25 feet wider than the existing section, but would average about 10 to 15 feet wider than the existing section. This widening would be symmetric from the existing centerline through the corridor.

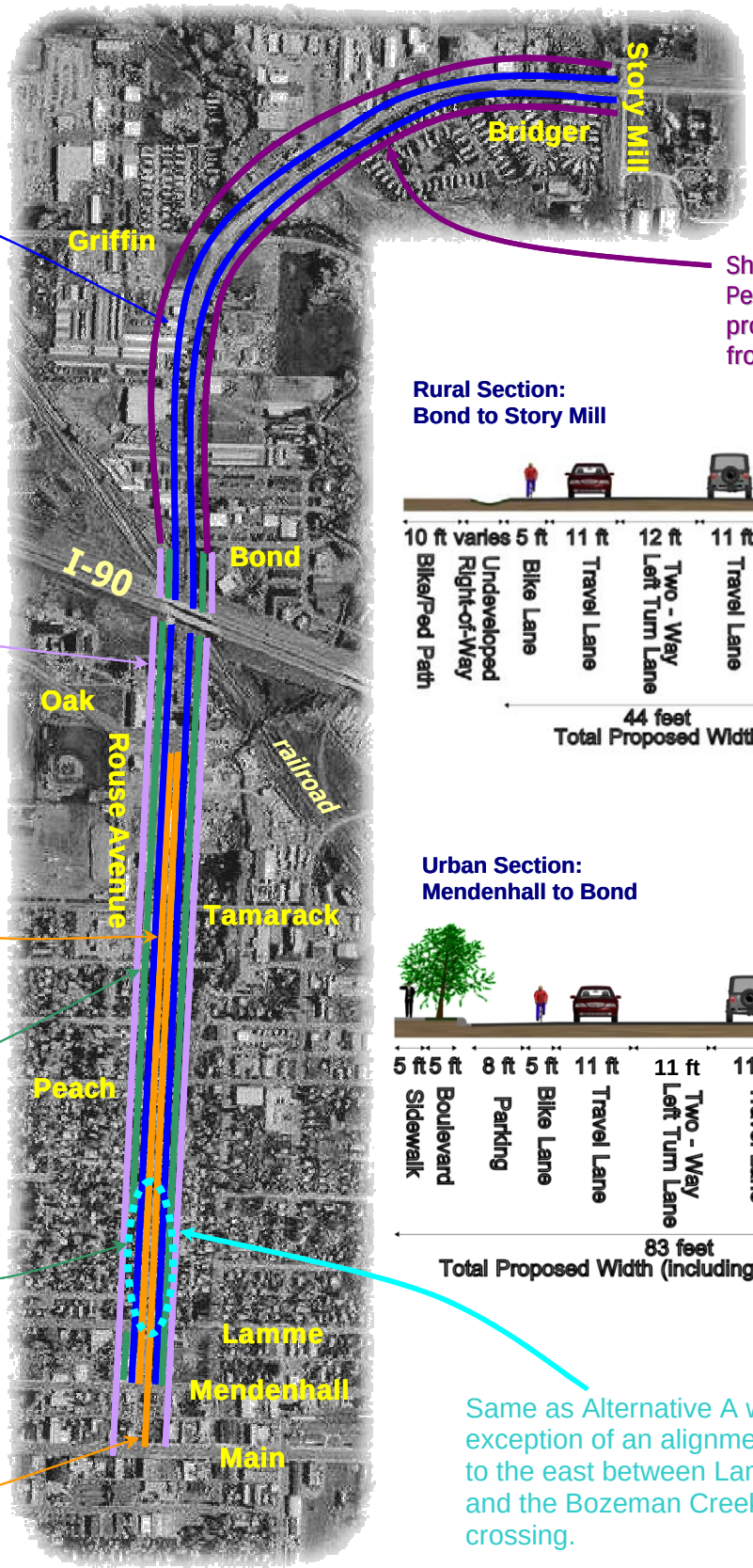
Alternative B is a three-lane section widened symmetrically from the centerline of the existing alignment except between Lamme Street and the Bozeman Creek crossing, where the alternative would be widened to the east to avoid impacts to Bozeman Creek. Alternative B is a three-lane urban section from Main Street to Bond Street and three-lane rural section north of Bond to Story Mill Road. Alternative B incorporates the same design elements and lane widths as Alternative A. They are:

- Reconstruction of Rouse between Main Street and Mendenhall Street within existing right-of-way limits.
- Three-lane urban section from Main Street to Bond Street, including two through lanes and a two-way left turn lane
- Three-lane rural section from Bond Street to Story Mill Road, including two through lanes and a two-way left turn lane
- Parking lanes on the east side of the roadway from Main Street to Mendenhall Street and on both sides of the roadway from Mendenhall Street to Oak Street
- Sidewalks on both sides of the roadway from Main Street to Bond Street, and a shared pedestrian and bicycle path on both sides of the road from Bond Street to Story Mill Road.
- Bike lanes on both sides of the roadway from Mendenhall Street to Story Mill Road
- Boulevard from Mendenhall Street to Bond Street, except between Lamme Street and the location where Bozeman Creek crosses Rouse Avenue, where boulevards are only included on east side of the street
- Side-street improvements at intersections to accommodate turning movements

As illustrated in Figure 2-3, the urban and rural sections shown for Alternative A also apply to Alternative B. The only difference between these two alternatives is that the proposed alignment of Alternative B is shifted so that the widening would occur entirely to the east between Lamme Street and the Bozeman Creek crossing in an effort to avoid the creek.

Figure 2-3
Primary Elements for Alternative B

(3-lane, widened symmetrically – modified)



Bike Lanes proposed on both sides from Mendenhall to Story Mill.

Shared Bicycle/ Pedestrian paths proposed on both sides from Bond to Story Mill.

Sidewalks proposed on both sides from Main to Bond.

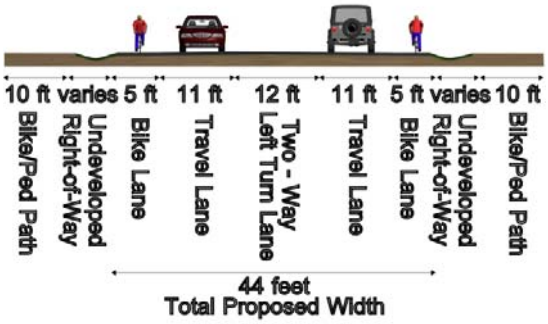
Parking proposed on both sides from Mendenhall to Oak.

Boulevards proposed on both sides from Mendenhall to Bond, except as noted below.

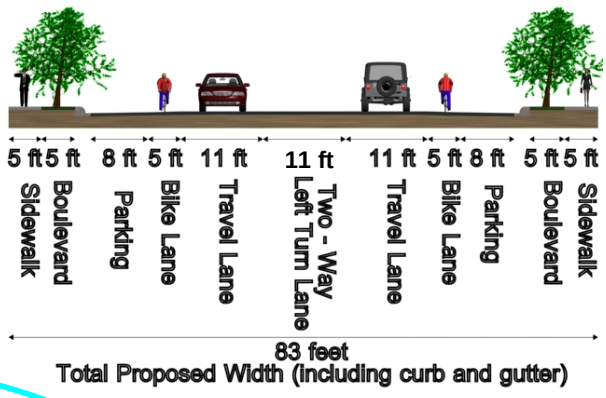
Boulevards eliminated on west side due to narrow corridor between Lamme and Bozeman Creek crossing.

Parking proposed on east side only from Main to Mendenhall.

Rural Section:
Bond to Story Mill



Urban Section:
Mendenhall to Bond



Same as Alternative A with the exception of an alignment shift to the east between Lamme and the Bozeman Creek crossing.

Alternative C is a five-lane urban section from Main Street to Bond Street and a five-lane rural section between Bond Street and Story Mill Road, widened symmetrically from the existing alignment. The primary elements of Alternative C include:

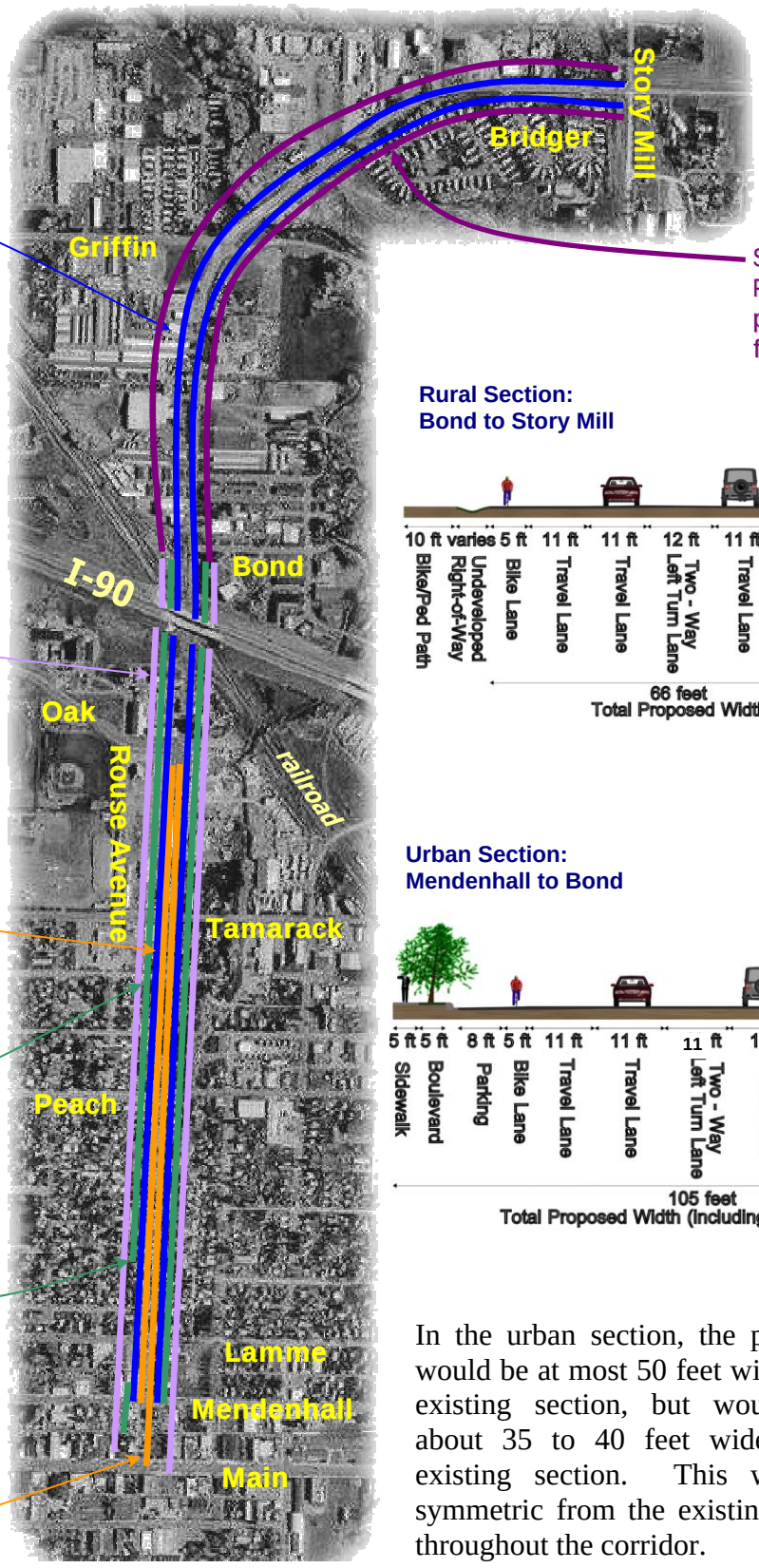
- Five-lane urban section from Main Street to Bond Street, including two through lanes and a two-way left turn lane
- Five-lane rural section from Bond Street to Story Mill Road, including two through lanes and a two-way left turn lane
- Parking lanes on the east side of the roadway from Main Street to Mendenhall Street and on both sides of the roadway from Mendenhall Street to Oak Street
- Sidewalks on both sides of the roadway from Main Street to Bond Street, and a shared pedestrian and bicycle path on both sides of the road from Bond Street to Story Mill Road.
- Bike lanes on both sides of the roadway from Mendenhall Street to Story Mill Road
- Boulevard from Mendenhall Street to Bond Street, except between Lamme Street and the location where Bozeman Creek crosses Rouse, where boulevards are only included on east side of the street

This five-lane alternative achieves LOS C at all intersections except Main Street and Rouse Avenue without any side-street improvements at the intersections.

Figure 2-4 illustrates the primary elements and differences between the urban and rural sections for Alternative C.

Figure 2-4
Primary Elements for Alternative C

(5-lane, widened symmetrically)



Bike Lanes proposed on both sides from Mendenhall to Story Mill.

Shared/ Bicycle Pedestrian paths proposed on both sides from Bond to Story Mill.

Sidewalks proposed on both sides from Main to Bond.

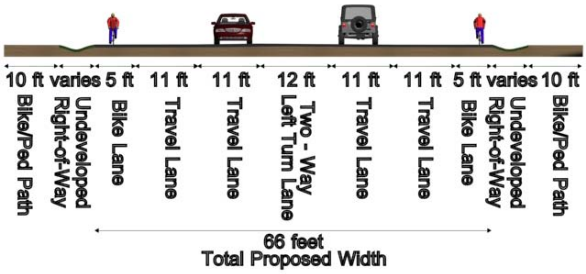
Parking proposed on both sides from Mendenhall to Oak.

Boulevards proposed on both sides from Mendenhall to Bond, except as noted below.

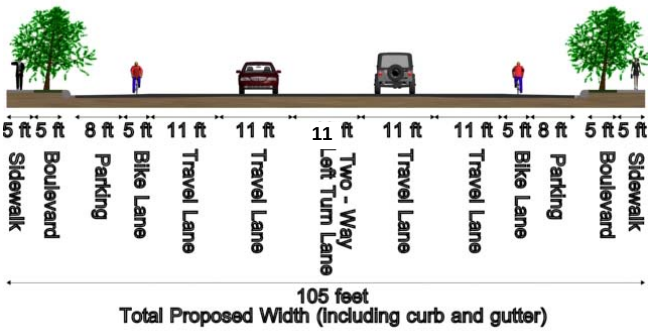
Boulevards eliminated on west side due to narrow corridor between Lamme and Bozeman Creek crossing.

Parking proposed on east side only from Main to Mendenhall.

Rural Section: Bond to Story Mill



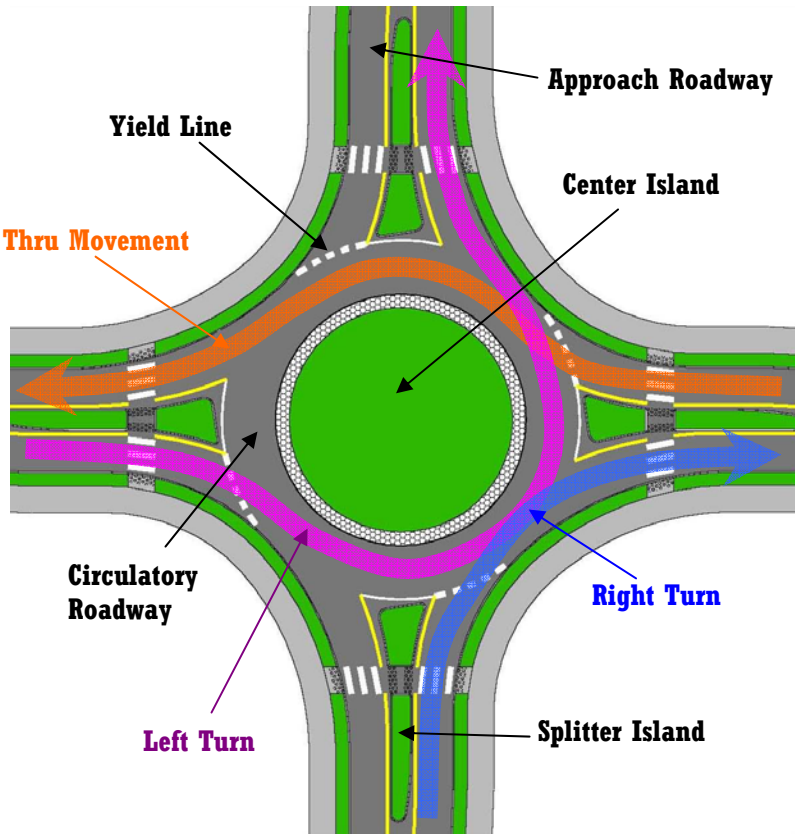
Urban Section: Mendenhall to Bond



In the urban section, the paved width would be at most 50 feet wider than the existing section, but would average about 35 to 40 feet wider than the existing section. This widening is symmetric from the existing centerline throughout the corridor.

Alternative D is a three-lane urban section from Main to Bond and a three-lane rural section north of Bond. Roundabouts would be used instead of signals at intersections where signals are warranted (see discussion of intersection control in Section 2.4, following). The center turn-lanes are interrupted by medians as they approach the roundabout intersections. Figure 2-5 shows this type of intersection. The primary elements of Alternative D are:

Figure 2-5
Typical Roundabout Features



- Reconstruction of Rouse between Main and Mendenhall within existing right-of-way limits.
- Three-lane urban section from Main Street to Bond Street, including two through lanes and a two-way left turn lane
- Three-lane rural section from Bond Street to Story Mill Road, including two through lanes and a two-way left turn lane
- Parking lanes on the east side of the roadway from Main to Mendenhall, no parking from Mendenhall to Tamarack, and parking on both sides of the roadway from Tamarack to Oak
- Sidewalks on both sides of the roadway from Main to Bond Street, a shared pedestrian and bicycle path on the east / south sides of the road from Bond to Story Mill, and a pedestrian path on the west / north sides of the road from Bond to Story Mill
- Bike lanes on both sides of the roadway from Mendenhall to Story Mill Road
- Boulevard from Mendenhall to Bond Street, except between Lamme and the location where Bozeman Creek crosses Rouse, where boulevards are only included on east side of the street.

Side street improvements at intersections are not included with Alternative D because of roundabout configurations. No typical sections are shown for Alternative D because lane widths vary throughout the corridor due to intersection configurations. The alignment of Alternative D is the same as Alternative B.

Table 2.1 compares all amenities provided for each of the four Build Alternatives.

Table 2.1
Comparison of Amenities for Build Alternatives

Alternative	Amenity	Main	Mendenhall	Lamme	Bozeman Creek Crossing	Tamarack	Oak	Bond	Griffin	Story Mill
A	Bike Lane									
	On-Street Parking	East Only								
	Boulevard			East Only						
	Sidewalk / Ped path	Sidewalk						Shared Path		
B	Bike Lane									
	On-Street Parking	East Only								
	Boulevard			East Only						
	Sidewalk / Ped path	Sidewalk						Shared Path		
C	Bike Lane									
	On-Street Parking	East Only								
	Boulevard			East Only						
	Sidewalk / Ped path	Sidewalk						Shared Path		
D	Bike Lane									
	On-Street Parking	East Only								
	Boulevard			East Only						
	Sidewalk / Ped path	Sidewalk						Shared Path		

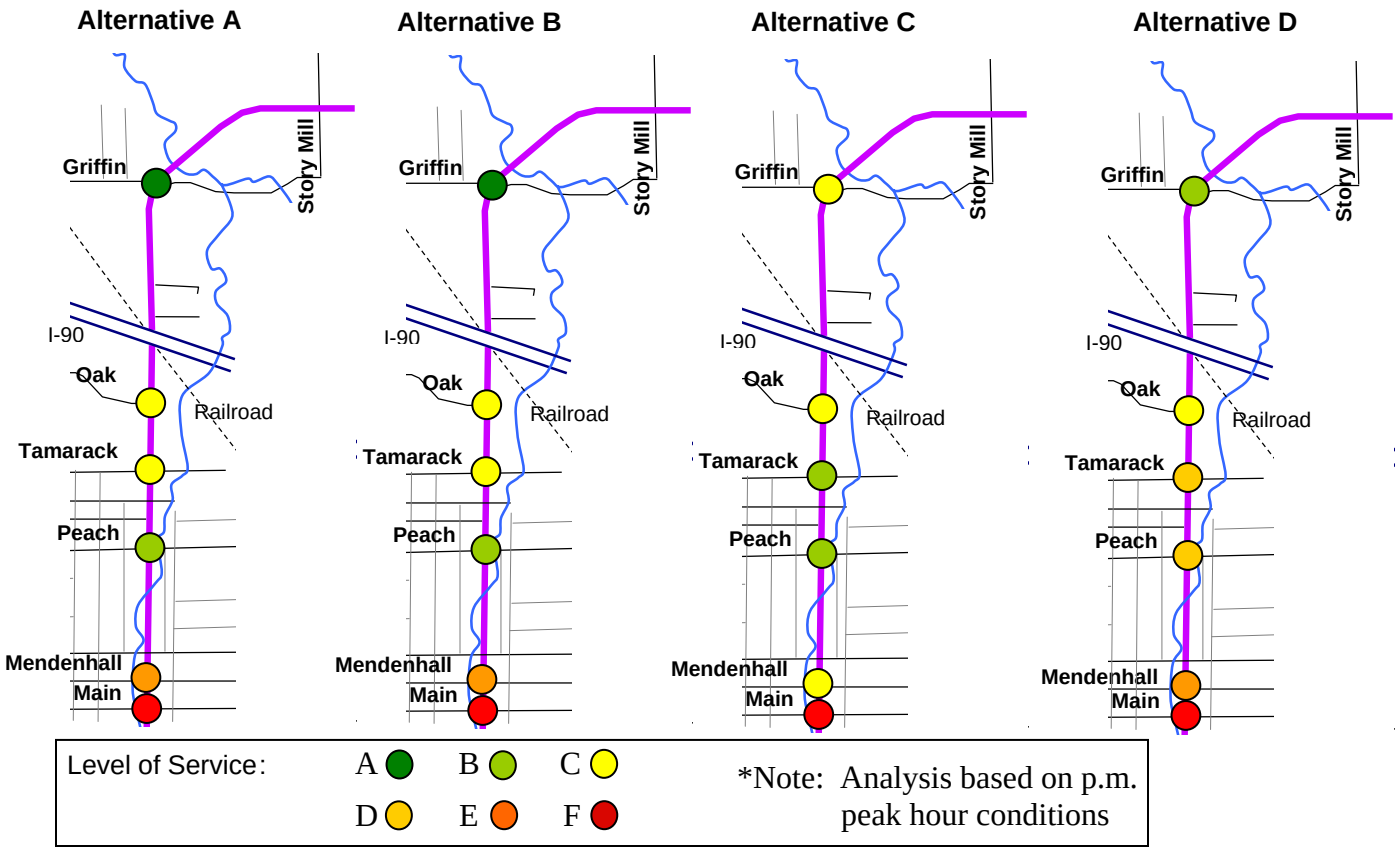
2.2 Alternatives Screening Process

All of the proposed alternatives, including the No-Build option, were evaluated using a two-phase screening process. In the first phase, they were evaluated to determine whether they met Purpose and Need. In the second, they were evaluated for their ability to meet project goals and design considerations.

Screen One:

The No-Build and four Build Alternatives were screened to determine how well they could meet Purpose and Need. The first step in Screen One was to see if they could improve LOS through the design year. As noted in Chapter 1, the No-Build alternative results in LOS F at all six major intersections in the corridor by the year 2030. The LOS forecasts for the four Build Alternatives are shown in Figure 2-6.

Figure 2-6
Year 2030 Level of Service Comparison



As illustrated in Figure 2-6 above, all four Build Alternatives fail to meet LOS C at the intersection of Rouse and Main, and all alternatives except Alternative C fail to meet LOS C at the intersection of Rouse and Mendenhall due to the constraints of these intersections. Additionally, Alternative D fails to meet LOS C at the Rouse intersections with Peach and Tamarack. This alternative provides the least improvement in LOS, and fails to achieve LOS C at most intersections.

Based on this screening analysis, Alternative D was eliminated from further consideration due to its inability to provide a comparable level-of-service to other alternatives with similar impacts and costs.

The three remaining Build Alternatives can equally accommodate the other aspects of the Purpose and Need regarding pedestrian and bicycle mobility, and were carried forward for the second level screening.

Screen Two:

Public participants in the scoping process stressed the importance of preserving the character of their community and of Rouse Avenue. They expressed this through a desire to minimize impacts to homes, businesses, community amenities, and historic properties throughout the corridor. Direct impacts resulting from Build Alternatives are discussed below.

A preliminary review of potential impacts was conducted for all project alternatives and is summarized in Table 2.2. Note that the No-Build Alternative would have no impacts throughout the corridor.

Table 2.2
Potential Impacts from Build Alternatives

Section	Alternative A	Alternative B	Alternative C
Main to Mendenhall	• none	• none	• Bozeman Hotel • City Hall • Fire Station • 1 building
Mendenhall to Lamme	• 2 buildings	• 2 buildings	• 2 buildings
Lamme to Creek Crossing	• Bozeman Creek • Creekside Park • 3 buildings	• 10 buildings	• Bozeman Creek • Creekside Park • 12 buildings
Creek Crossing to Tamarack	• 4 buildings	• 5 buildings	• 27 buildings
Tamarack to Oak	• 1 building	• 1 building	• 1 building
Oak to Bond	• 1 building	• 1 building	• 1 building
Bond to Story Mill Road	• none	• none	• none
TOTALS	• Bozeman Creek • Creekside Park • 11 buildings	• 19 buildings	• 47 buildings, including Bozeman Hotel, City Hall, and the Fire Station • Bozeman Creek • Creekside Park

As demonstrated in the above table, widening to the east between Lamme Street and Bozeman Creek crossing (Alternative B) avoids impacts to Bozeman Creek and Creekside Park, but results in more impacts to buildings than Alternative A. A five-lane section (Alternative C) has more than double the number of impacts of either three-lane section (Alternatives A and B). Alternative A encroaches on Creekside Park by approximately 25 feet, compared to approximately 36 feet under Alternative C.

While not a specific screening criteria for this proposed project, it should be noted that the five-lane alternative is projected to cost over $10 million more than the three-lane alternatives. If the project were to be constructed in 2012 as currently programmed, the three-lane alternatives would cost approximately $18 million while the five-lane alternative would cost closer to $28.4 million. The vast majority of the difference lies in the cost for additional right-of-way and acquisitions required under the five-lane alternative.

All of the proposed alternatives include on-street parking, except between Main and Mendenhall, where parking is only included on the east side of the street. All of the alternatives were determined to adequately accommodate parking.

All of the alternatives include flexibility in the conceptual design to minimize impacts where possible and to accommodate the greatest number of corridor amenities.

Table 2.3 provides an overall summary of how well each alternative satisfied each of the screening criteria through the alternative screening process.

Table 2.3
Screening Summary

Screening Criteria	Alternative A	Alternative B	Alternative C	Alternative D
1: Meets Purpose and Need	Good	Good	Good	Poor
Recommendation	*Forward*	*Forward*	*Forward*	***Eliminate***
2: Maintains Community Character	Good	Good	Poor	--
Minimizes Impacts	Fair	Fair	Poor	--
Accommodates Residential Parking	Good	Good	Good	--
Integrates Flexible Design Criteria	Good	Good	Good	--
Recommendation	*Forward*	*Forward*	***Eliminate***	--

Due to the fact that the five-lane alternative (Alternative C) has a substantially larger footprint and greater level of impact but no appreciable difference in Level of Service, Alternative C was eliminated based on its inability to maintain community character as well as its substantial impacts compared to other alternatives.

Further Refinements:

As indicated in Table 2.3 above, Alternatives A and B meet Purpose and Need and generally fulfill the Project Goals. In an effort to further minimize the anticipated impacts, the Project Team explored refinements of the conceptual design. The area with the greatest extent of impact is in the narrowly constrained area between Lamme and the Bozeman Creek crossing. The corridor is confined by the creek on the west and dense residential development to the east. One possible refinement in this area would be to eliminate on-street parking and create off-street parking for affected residents. Boulevards could also be eliminated in short segments of the Rouse Avenue corridor, particularly where it is constrained by Bozeman Creek, in order to further reduce impacts to adjacent homes and businesses.

The Project Team also discussed a number of design options for bike/pedestrian paths along this corridor. These discussions occurred amongst City, MDT, and FHWA staff, as well as with members of the public who expressed particular concern for bike and pedestrian travel in the area. Provision of bike lanes along the roadway and sidewalks adjacent to the roadway appeared to meet the expressed needs of the bicycle interests in the constrained portion of the corridor (from Main to Bond); while bike lanes and separated bike/ped paths were more desirable in the northernmost portion of the corridor. While refining the remaining alternatives, it became apparent that it would be more cost effective and impose fewer impacts to extend the urban section from Bond up to the East Gallatin River crossing north of Griffin to include bike lanes and sidewalk for this entire extent of the corridor. For the remainder of the corridor, there is room within the right-of-way to accommodate a separated shared-use path on the north, but a shared use bike/ped path on the south would need to be constructed on the adjacent private property as those parcels develop in the future. Neither MDT, nor any other governmental agency can construct this portion of the path without additional right-of-way purchase or

compensation to adjacent landowners; thus, the City is encouraged to require construction of this path by private interests as a condition of future subdivision approvals.

Table 2.4 provides a summary comparison of impacts of the refined alternative compared to Alternatives A and B. As demonstrated in the table, this refined alternative avoids impacts to Bozeman Creek and Creekside Park, reduces total right-of-way needs, and avoids direct impacts to at least five residences and two businesses when compared to Alternatives A or B.

Table 2.4
Impact Comparison

Corridor Portion	Alternative A	Alternative B	Refined Alternative
Main to Mendenhall	• none	• none	• none
Mendenhall to Lamme	• 2 businesses	• 2 businesses	• none
Lamme to Creek Crossing	• Bozeman Creek • Creekside Park • 3 residences	• 10 residences	• none
Creek Crossing to Tamarack	• 4 residences	• 5 residences	• 2 residences
Tamarack to Oak	• 1 public building	• 1 public building	• none
Oak to Bond	• 1 business	• 1 business	• 1 business
Bond to Story Mill Road	• none	• none	• none
Total Right-of-Way Required	• 1.9 acres	• 2.4 acres	• 1.4 acres
TOTALS	• Bozeman Creek • Creekside Park • 7 residences • 1 public building • 3 businesses	• 15 residences • 1 public building • 3 businesses	• 2 residences • 1 business

Based on the above comparison of impacts, and its ability to meet Purpose and Need and provide a balanced approach to the Project Goals, this refined alternative is forwarded as the Preferred Alternative for improvements in the Rouse Avenue corridor.

2.3 Identification of the Preferred Alternative

Under the Preferred Alternative, Rouse Avenue would follow the same alignment as Alternative B to avoid impacts to Bozeman Creek and Creekside Park, but would not include on-street parking or boulevards where impacts could be substantially reduced. The primary elements of this alternative include:

- Three-lane urban section from Main Street to the East Gallatin River crossing northeast of Griffin Drive, including two through lanes and a two-way left turn lane
- Three-lane rural section from the East Gallatin River crossing to Story Mill Road, including two through lanes and a two-way left turn lane except where the roadway is narrowed to fit under the Interstate 90 overpass.
- On-street parking on east side of the street between Main and Mendenhall, on both sides of the street between Mendenhall and Lamme, and off-street parking north of Lamme
- Sidewalks on both sides of the roadway from Main to the East Gallatin River crossing, (a shared pedestrian/bicycle path would be constructed on the north from the river crossing to Story Mill, but the path on the south would be provided by others concurrent with

development of those parcels – See Bicycle and Pedestrian Concerns in Chapter 3 for a more detailed discussion)
- Bike lanes on both sides of the roadway from Mendenhall to Story Mill Road
- Boulevard from Mendenhall to Griffin Street, except between Lamme and the Bozeman Creek crossing where boulevards are eliminated to avoid impacts to Bozeman Creek
- Side-street improvements at intersections to accommodate turning movements

The Preferred Alternative generally eliminates or modifies the design elements as indicated above, and in Table 2.5 below. For instance, on-street parking is eliminated from Lamme to Oak as compared to Alternatives A and B; boulevards are eliminated from Lamme to Bozeman Creek Crossing; sidewalks and boulevards are extended from Bond to Griffin; and the shared pedestrian path extends from that point to Story Mill.

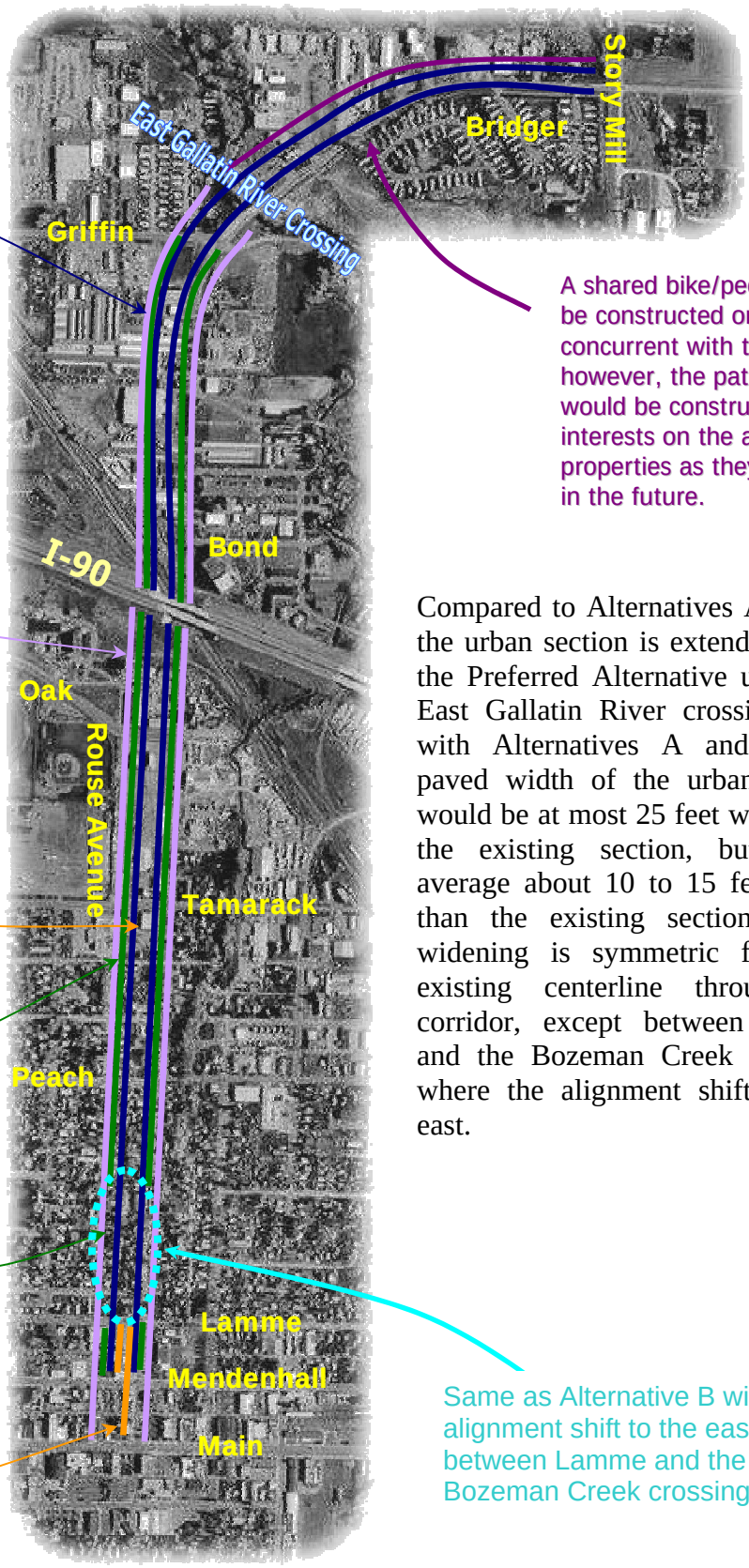
Table 2.5
Comparison of Amenities for the Preferred Alternative

Alternative	Amenity	Main	Mendenhall	Lamme	Bozeman Creek Crossing	Tamarack	Oak	Bond	Griffin	Story Mill
A	Bike Lane									
	On-Street Parking	East Only								
	Boulevard			East Only						
	Sidewalk / Ped path	Sidewalk						Shared Path		
B	Bike Lane									
	On-Street Parking	East Only								
	Boulevard			East Only						
	Sidewalk / Ped path	Sidewalk						Shared Path		
Preferred	Bike Lane									
	On-Street Parking	East Only								
	Boulevard									
	Sidewalk / Ped path	Sidewalk							Shared Path	

The Preferred Alternative is shown in Figures 2-7 and 2-8 on the following pages.

Figure 2-7
Primary Elements for Preferred Alternative

(3-lane, Refined)



Bike Lanes proposed on both sides from Mendenhall to Story Mill.

A shared bike/pedestrian path to be constructed on the north side concurrent with this project; however, the path to the south would be constructed by private interests on the adjacent properties as they are developed in the future.

Sidewalks proposed on both sides from Main to the East Gallatin River crossing.

On-Street parking eliminated north of Lamme. Off-street parking proposed at appropriate locations.

Boulevards proposed on both sides from Mendenhall to Griffin, except as noted below.

Boulevards eliminated due to narrow corridor between Lamme and Bozeman Creek crossing.

Parking proposed on east side only from Main to Mendenhall. Parking proposed on both sides from Mendenhall to Lamme.

Compared to Alternatives A and B, the urban section is extended under the Preferred Alternative up to the East Gallatin River crossing. As with Alternatives A and B, the paved width of the urban section would be at most 25 feet wider than the existing section, but would average about 10 to 15 feet wider than the existing section. This widening is symmetric from the existing centerline through the corridor, except between Lamme and the Bozeman Creek crossing, where the alignment shifts to the east.

Same as Alternative B with the alignment shift to the east between Lamme and the Bozeman Creek crossing.

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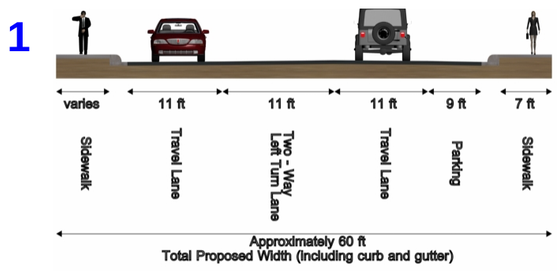
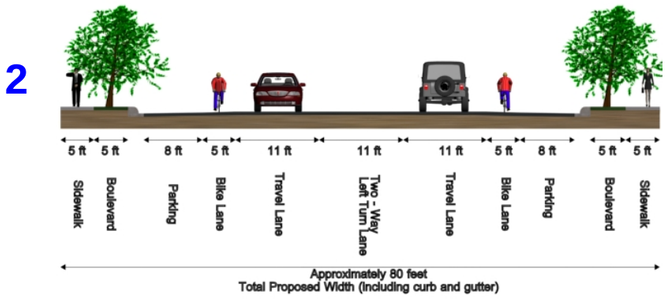
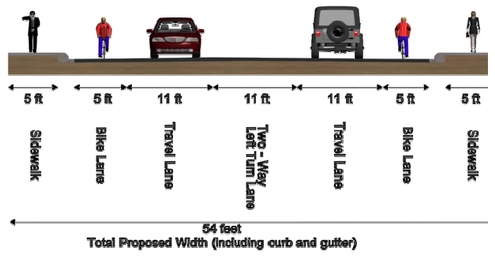
Figure 2-8
Footprint of the Preferred Alternative
Page 1 of 4



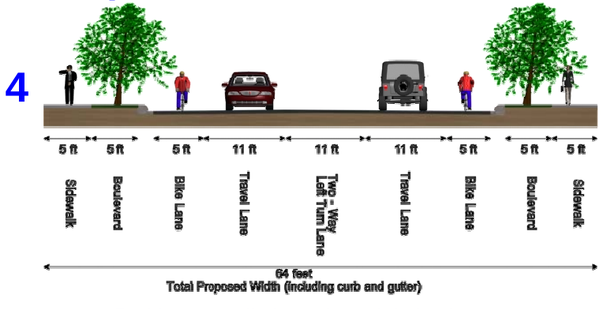
Match existing width to avoid impacts to the historic Bozeman Hotel.



A boulevard was added at the request of Hawthorne School



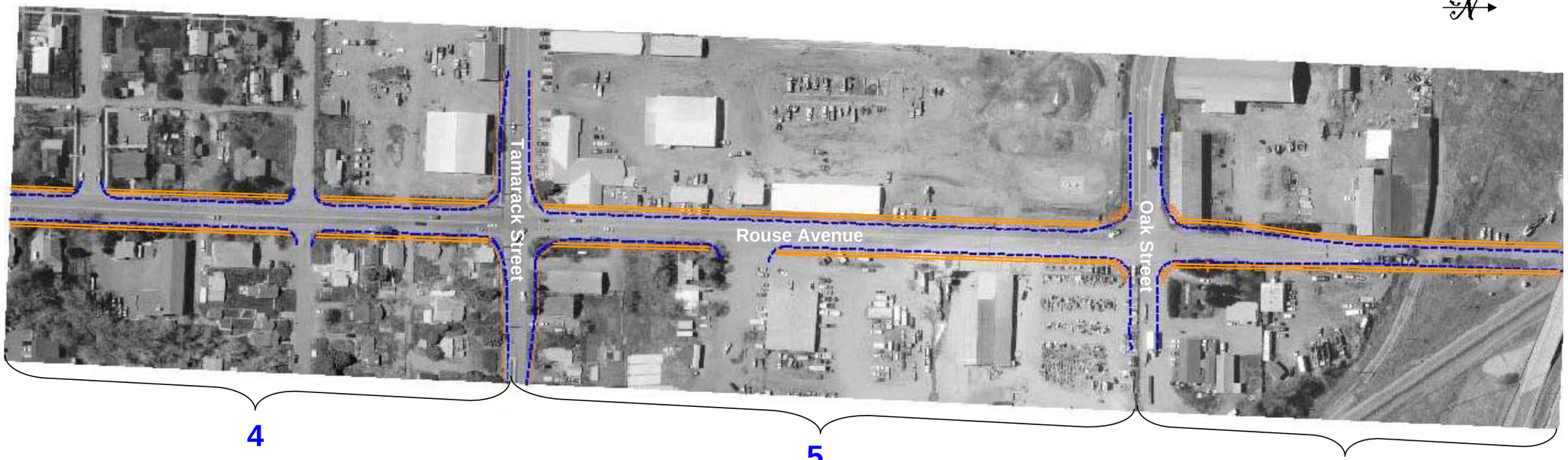
Eliminate boulevard and parking to avoid impacts to Bozeman Creek.

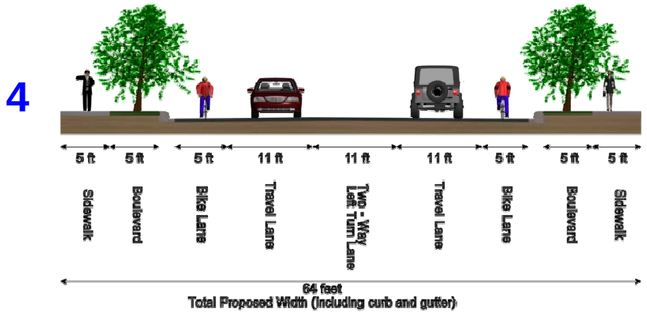


Parking was eliminated to minimize impacts in this residential portion of the corridor.

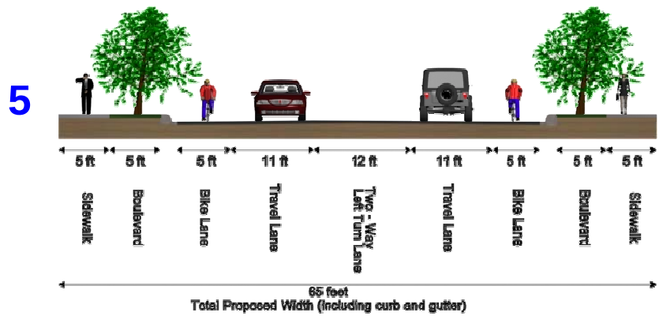
Notes:
Figure is not to scale.
Trees are not representative of final implementation.

Figure 2-8
Footprint of the Preferred Alternative
Page 2 of 4

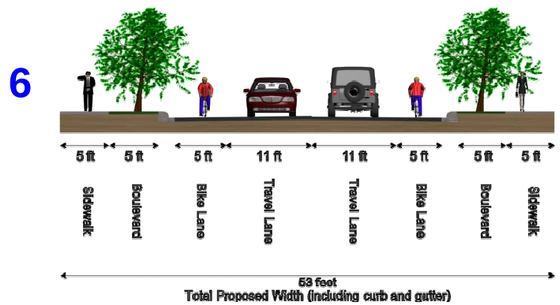




Parking was eliminated to minimize impacts in this residential portion of the corridor.



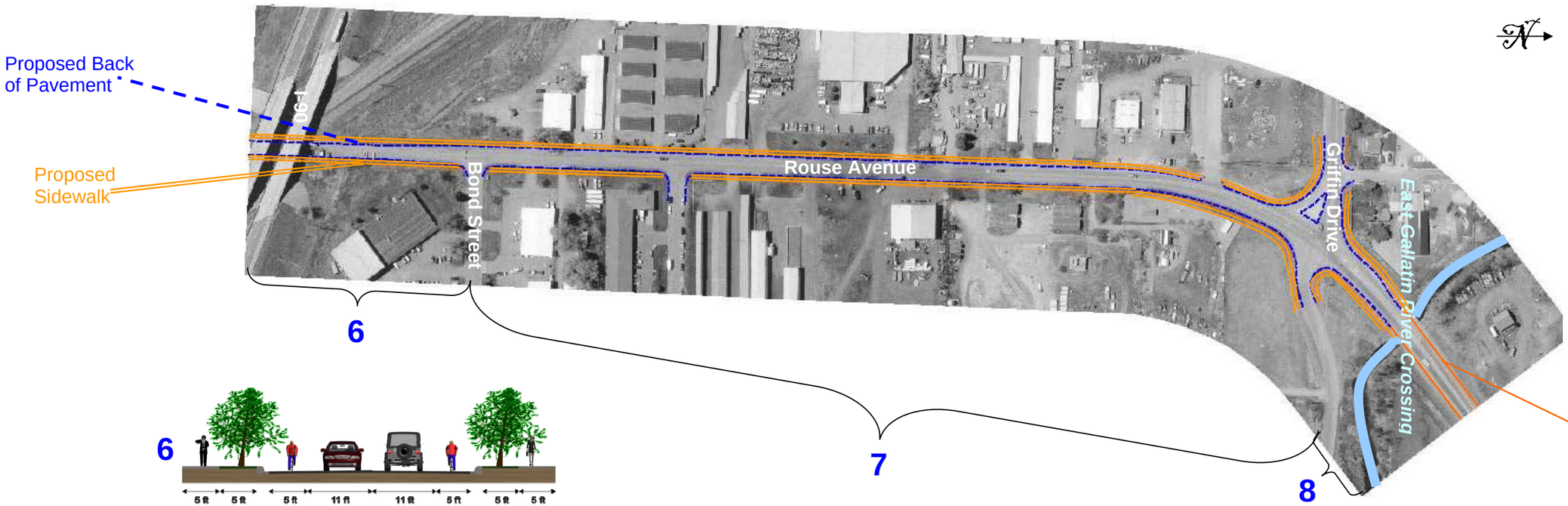
Full urban section

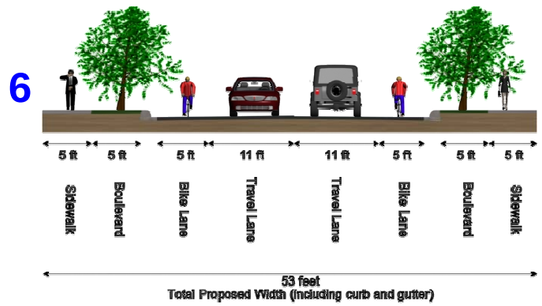


The two-way left turn lane was eliminated to fit the road under the I-90 overpass structure.

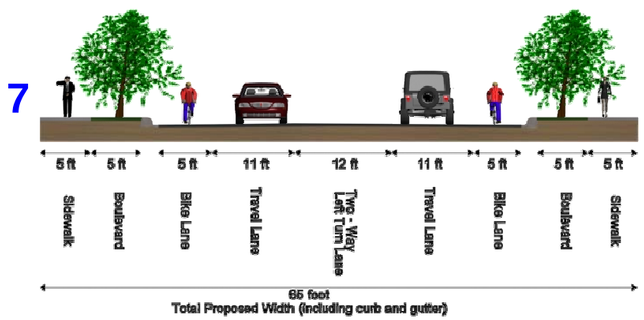
Notes:
Figure is not to scale.
Trees are not representative of final implementation.

Figure 2-8
Footprint of the Preferred Alternative
Page 3 of 4

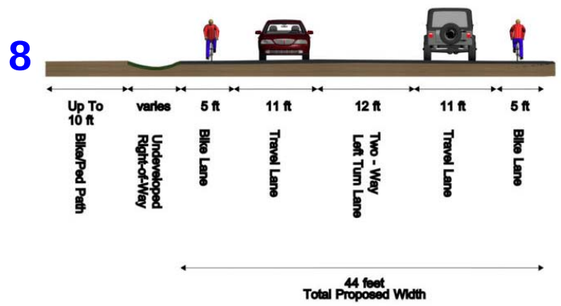




The two-way left turn lane was eliminated to fit the road under the I-90 overpass structure.



Full urban section



Rural section

Notes:
Figure is not to scale.
Trees are not representative of final implementation.

Figure 2-8
Footprint of the Preferred Alternative
Page 4 of 4

Rural section

Notes:
Figure is not to scale.
Trees are not representative of final implementation.

2.4 Design Options

Parking

The need to perpetuate the availability of parking within the Rouse Avenue corridor is of recognized importance. The current availability for on-street parking was estimated based on an assumption of an average parking space length compared to the legal and usable space within the corridor. It is estimated that there are just over 100 on-street parking spaces available between Lamme and Tamarack (50 south of Peach and 50 north of Peach) which would be eliminated due to the Preferred Alternative.

This loss of on-street parking could be made up in one of three ways: 1) During right-of-way negotiations, MDT could provide financial assistance to individual property owners to construct a driveway on their residential property to replace lost parking; 2) MDT could identify private residential parcels (which would be acquired due to the overall right-of-way impacts from the proposed project) and convert those parcels into parking lots reserved exclusively for neighboring residents; 3) MDT could provide a combination of funding for private driveway development and parking lots to replace lost parking.

While it is premature to specify the approach to be used to replace lost parking, MDT is committed to working with individual property owners during final design and right-of-way acquisition to mitigate for the loss of on-street parking. More details on the resolution of this issue will be provided in the Finding of No Significant Impact (FoNSI) if the project is approved, and a Memorandum of Understanding between MDT and the City of Bozeman will be developed to outline future maintenance responsibilities for any parking lots constructed as part of this proposed project.

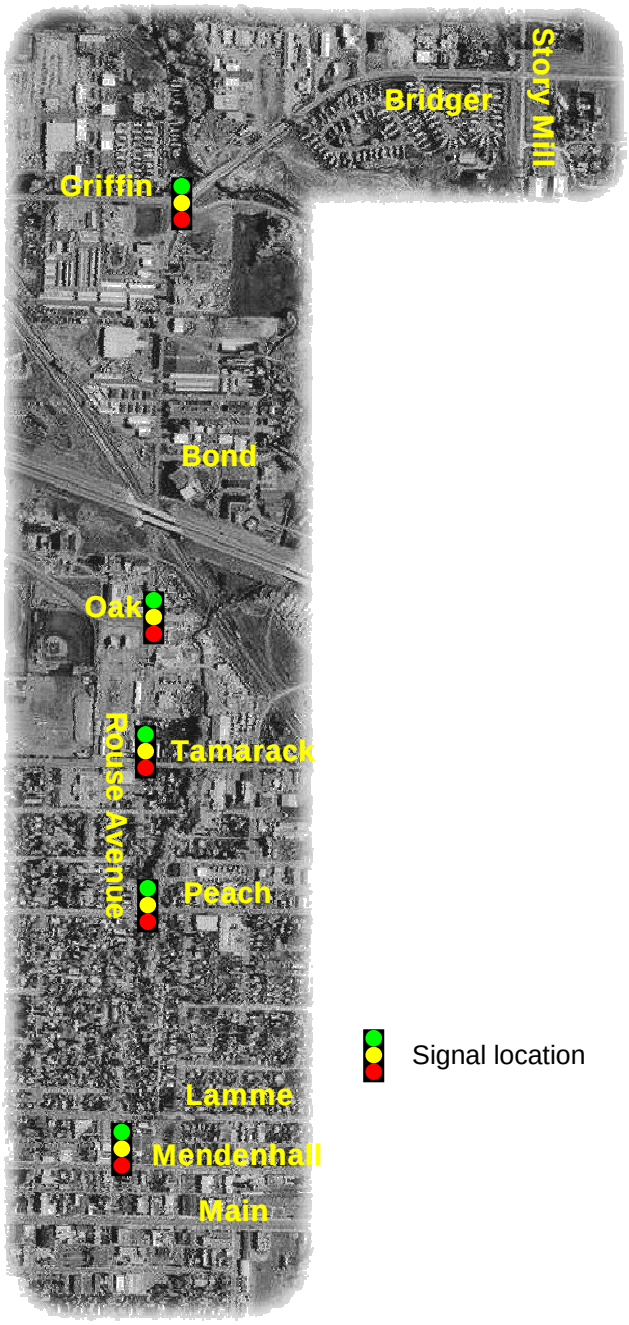
Traffic Control Options

Based on signal warrant analyses, traffic control devices need to be installed at Peach, Tamarack, Oak, and Griffin as depicted in Figure 2-9. In addition, the traffic signal at the intersection of Rouse and Mendenhall needs to be upgraded to current standards.

Roundabouts were considered individually at each of the intersections where a signal would be warranted. Roundabout capacity and delay analyses were conducted to determine capacity, Level of Service, and performance. The only intersection in the corridor where a roundabout intersection would function from an operational standpoint is at Rouse and Griffin. At this intersection, a single-lane roundabout would function adequately as a traffic control device; however, as the conceptual design was developed, the impacts to adjacent parcels and the cost for this traffic control measure were considered to outweigh the potential benefits. The roundabout option has been eliminated from further consideration at this location.

An additional traffic signal may be installed at Story Mill as a result of the proposed development south of Bridger Drive. The signal would be installed as a condition of approval by the City of Bozeman for the subdivision and would be completed separate from this project.

Figure 2-9
Proposed Intersection Traffic Control



2.5 Other Alternatives Considered But Eliminated

Transportation System Management

Transportation System Management (TSM) strategies focus on improving roadway efficiency, and typically overlap with Intelligent Transportation System (ITS) technologies. The primary purpose of a TSM is to "get the most out of the existing system" through cost effective improvements such as adding auxiliary lanes in heavily congested portions of a corridor, and/or adding turn lanes at congested intersections, or optimizing signal timing throughout a corridor. Other options might include fringe parking, ridesharing, and High Occupancy Vehicle (HOV) lanes.

FHWA has indicated in their Technical Advisory (TA 6640.8A) that these limited construction alternatives are "usually relevant only for major projects proposed in urbanized areas over 200,000 in population." Due to the limited population size of Bozeman, the short length of the roadway improvement project, and the diversity of commuting trips in this corridor, it was determined that a TSM alternative would not provide the necessary improvements in capacity to eliminate the need for other investments in capacity expansion. It is possible, however, that efficiencies can be gained through better signal timing along Rouse Avenue, and will be explored further if the project progresses.

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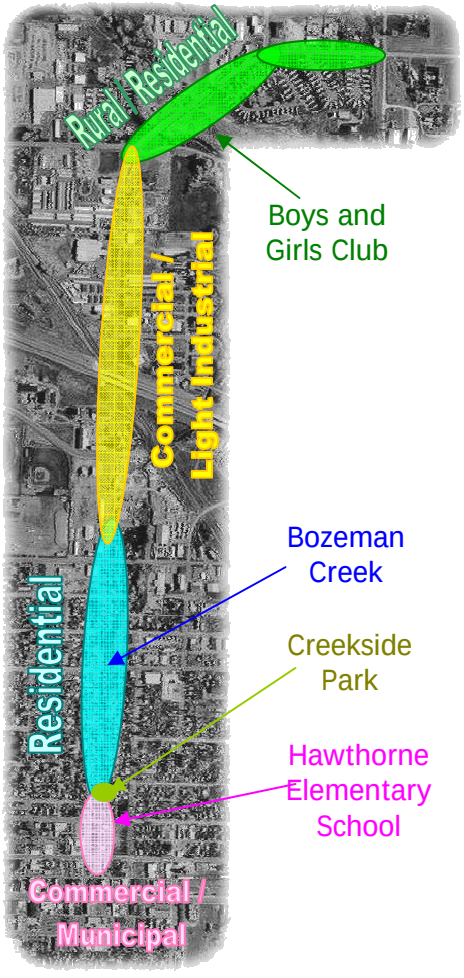
3.0 IMPACTS AND MITIGATION

This chapter contains information on existing social, economic, and environmental resource conditions as well as impacts due to the proposed action. This information was developed in cooperation with state and federal agencies, Gallatin County officials, City of Bozeman staff, and members of the general public. NEPA/MEPA and the FHWA Technical Advisory (T6640.8A) outline the specific areas of environmental concern to be addressed through environmental analysis. Each of these specific areas are discussed in this chapter.

3.1 Land Use

The Project Team reviewed existing, on-going, and planned development within the corridor, and assessed the degree to which this proposed project may affect existing or planned land use in the project area. In addition to the information contained below, Section 3.20 also contains information regarding potential indirect impacts on land use.

Figure 3-1
Land Use



Consistency with Local Plans

Rouse Avenue was nominated for improvements based on a need for improved capacity. The *Greater Bozeman Area Transportation Plan Year 2001 Update* (the *Plan*) identified the Rouse corridor from Main Street to Story Mill Road as a priority for reconstruction and widening to a three-lane arterial. The problem identified in the *2001 Plan Update* was "limited capacity, poor condition."

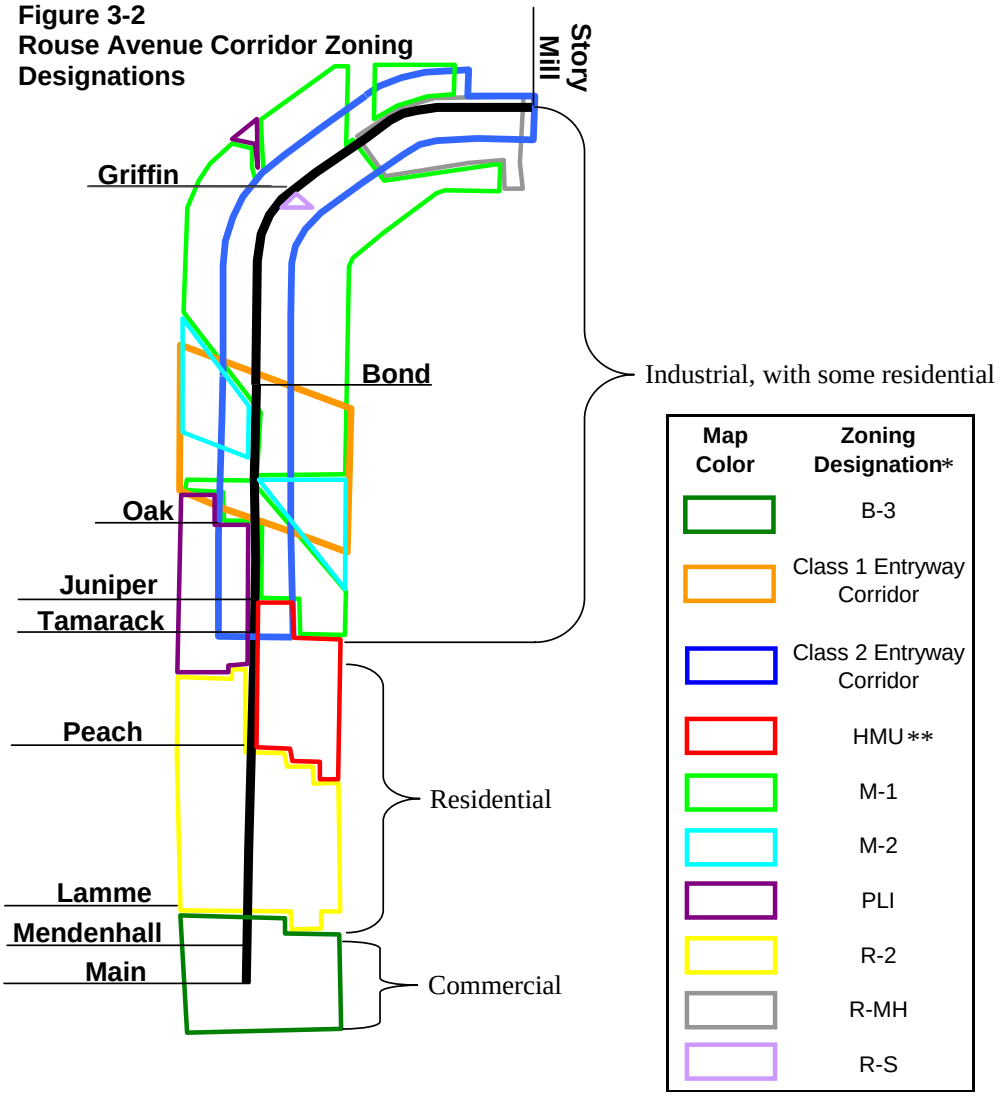
Maintaining community character is one of the Project Goals for the proposed project. As illustrated in Figure 3-1, land use is characterized by zones that can be characterized as commercial/municipal, residential, commercial/light industrial, and rural/residential. In the southern commercial/municipal zone, there are commercial retail establishments at the intersection of Main Street and Rouse Avenue. Also in this zone are several municipal buildings and the Hawthorne Elementary School. In the residential zone between Lamme and Tamarack Streets, land use is dominated by privately-owned single-family and multi-family residences. Impacts to these residences are detailed further in the Right-of-Way, Easements, and Relocations section later in this document. Several parks are located within a few blocks of this section of the corridor.

Between Tamarack and Griffin, Rouse Avenue can be characterized primarily as a commercial and light industrial zone. A mobile home development is located

amidst commercial developments in the rural/residential zone at the north end of the corridor. The historic Story Mill is located just past the project terminus to the south of Bridger Drive. There are residential developments planned and under construction near the northern project terminus.

As shown in Figure 3-2, the area between Peach and Juniper Streets on the east side of Rouse Avenue is located within the Historic Mixed-Use Zoning District and the Northeast Urban Renewal District (NURD). The *Northeast Urban Renewal District Plan* (2005) was prepared in response to the City Commission's finding of blight on August 15, 2005. The *NURD Plan* is intended to remedy the conditions of blight and to ensure the vitality of the neighborhood. The *Plan* envisions a mixed-use neighborhood that is user-friendly, safe, secure, and healthy with a diversity of housing and businesses that maintain the unique ambiance and historic character of the District. The *NURD Plan* includes recommendations to enhance boulevards and public right-of-way by planting and maintaining trees and to provide a park that includes a children's playground and connectivity to adjacent wetlands and open space within the NURD, outlined in red in Figure 3-2.

Figure 3-2
Rouse Avenue Corridor Zoning Designations



****Northeast Urban Renewal District (NURD) encompasses HMU Zoning District in Figure 3-2.**

According to the 2005 Bozeman Zoning Map, the proposed project lies within the City of Bozeman Zoning Jurisdiction. The project area is located within or adjacent to ten City zoning designations. Figure 3-2 illustrates zoning in the area of the proposed project.

A short summary of the zoning follows:

- B-3 denotes the central business district.
- Class I and II Entryway Corridors are considered overlay districts and occur on arterials that "introduce visitors and residents alike to Bozeman." The Administrative Review Staff and/or Design Review board follow guidelines set forth by the City of Bozeman to review development in these corridors.
- HMU denotes a historic mixed use district, in this case the Northeast Neighborhood.
- M-1 and M-2 are manufacturing and light industrial zones.
- PLI denotes public lands and institutions. The section of the Rouse Avenue corridor that is zoned for public use contains both the MDT shops and the fairgrounds.
- R-2, R-MH, and R-S are residential zones.

The Preferred Alternative is consistent with current zoning.

Parks and Recreation / NL&WCF - Section 6(f) Lands, and Section 4(f) Properties

No National Land & Water Conservation Fund (NL&WCF) Act - Section 6(f) (16 U.S.C.460) lands have been identified within the vicinity of the proposed project. No acquisition of NL&WCF - Section 6(f) lands would occur, and there would be no impacts by the proposed project's Build Alternatives.

Section 4(f) of the Transportation Act provides protection of significant publicly owned public parks, recreation areas, or wildlife and waterfowl refuges, or any significant historic site unless a determination is made that:

- There is no feasible and prudent alternative to the use of land from the property; and
- The action includes all possible planning to minimize harm to the property resulting from such use.

The Preferred Alternative would impact one Section 4(f) property, the Hawthorne Elementary School. The proposed improvements would involve a minor encroachment on the historic site, though the proposed construction limits would not impact the building itself.

Mitigation

No mitigation is necessary for general land use issues, but refer to Chapter 4 for further descriptions of impacts and mitigation for the protected 4(f) resources.

3.2 Farmlands

The 1981 *Farmland Protection Policy Act* (FPPA) requires that the effects of proposed highway projects be examined before any farmland is acquired. The FPPA definition of farmlands includes all areas in non-urban use. This does not mean that these lands are currently in crop production, since the definition also includes forested, idle, pasture, open and recreational lands,

as well as unpaved roads, rural residences and farm buildings. No analysis of farmland impacts was necessary since this project lies entirely within the urban built-up area of Bozeman.

3.3 Social

This section describes the general community characteristics and social conditions in the study area, including City and County population, demographic and income data, and community and public facilities. This section also addresses impacts on the traveling public and/or other users of the existing and proposed transportation facility, and/or impacts on community cohesion.

Population Data

The City of Bozeman has experienced continuous growth over the past 25 years. In 1980, Bozeman's population was 21,645. Bozeman grew to 22,660 in 1990, an increase of nearly five percent in ten years, or about half a percent per year. By 2000, Bozeman's population had reached 27,509, a 21 percent increase over the 1990 figure, just over one percent growth annually. Population estimates indicate that Bozeman grew by an additional 18 percent to reach 32,414 people in 2004, which corresponds to a rate of over four percent per year.

The City of Bozeman accounted for almost 28 percent of the growth that occurred in Gallatin County between 1990 and 2000 (4,849 people out of 17,368). Assuming Bozeman continues to maintain the same percentage of Gallatin County's overall population growth into the future, the community is projected to gain 6,418 residents between 2005 and 2025 for a total population of 38,832 in 2025 (NPA Data Services Inc.). This represents almost a 20 percent increase in population for the period 2005-2025. The annual average growth rate for the 20-year period 2005-2025 is projected to be approximately one to two percent. This projection is consistent with the figures used in the Greater Bozeman Area Transportation Plan Year 2001 Update, which includes moderate, high, and very high growth scenarios.

Demographic Composition

The majority of people in Bozeman (72.3 percent) are under the age of 40. Bozeman is predominantly white (over 95 percent), with a minority population between three and five percent.

Household Income

The median household income is $32,156 in Bozeman. Over 30 percent of Bozeman households earn less than $20,000 per year. The largest percentage of households in Bozeman (27 percent) earn between $30,000 and $49,999 per year.

Community and Public Facilities

There are several community facilities and public services located within the project area, including Creekside Park, Hawthorne Elementary School, the old Bozeman Public Library building, Bozeman Fire Station #1, the Bozeman Police Station, and Bozeman City Hall.

There would be no direct impacts to any of these structures; however, the Preferred Alternative would require acquisition of a portion of the Hawthorne School front lawn facing Rouse Avenue to accommodate widening of the roadway.

Travel/Access

Provision of a reconstructed and upgraded roadway under any of the Build Alternatives would result in improved access for all area residents, businesses, and travelers who rely on Rouse Avenue. These improvements would not be provided under the No-Build Alternative. The Preferred Alternative would enhance roadway operation and safety, accommodate the increasing travel volumes on the route, and satisfy minimum MDT design criteria. The proposed project would also improve the capacity of Rouse Avenue by organizing the flow of traffic turning movements.

Rouse Avenue is classified by the City of Bozeman as an Entryway Corridor. Along with 7th and 19th Avenues, it is one of the primary north-south routes into Bozeman and means of accessing the downtown business district. It is used as a truck route for downtown deliveries as well as businesses on Rouse Avenue.

The Preferred Alternative makes the residential portion of the Rouse corridor more pedestrian-friendly by integrating consistent sidewalks throughout the corridor and providing a narrow street width that allows pedestrians to cross the street more easily.

Mitigation

The Preferred Alternative is expected to have no effect on population growth, demographic composition, or income levels. It is anticipated to improve travel and access. No mitigation is required.

3.4 Right-of-Way, Easements, and Relocations

Right-of-way would be required throughout much of the corridor to accommodate the proposed improvements. Although the amount of new right-of-way would vary throughout the corridor due to the variable existing widths, it is estimated that approximately 1.4 acres of new right-of-way would be required and that a total of 78 parcels on both sides of the existing alignment would be affected by the Preferred Alternative. Relocations of at least two residences and one business would be required under the Preferred Alternative due to direct conflicts between the proposed construction limits and the existing structures. Additional relocations may be necessary and would be determined during right-of-way negotiations with individual property owners. Some of the areas acquired may become available for residential parking lots to replace the loss of on-street parking as indicated in Chapter 2 of this EA.

Tables 3.1 and 3.2 provide a summary of the proposed right-of-way impacts on residential and commercial properties in the corridor. These tables also provide a summary of the distance from the proposed edge of construction limits (or new sidewalk) to the existing residential or commercial structure at those addresses. Figure 3-3 illustrates those properties that would

require full acquisition under the Preferred Alternative based on the unavoidable conflicts with the structures.

Table 3.1
Right-of-Way Impacts on Residential Properties

Full Acquisition*	0 to 5 feet from structure	5 to 10 feet from structure	10 to 15 feet from structure	15 to 20 feet from structure
540 N. Rouse	214 N. Rouse	318 N. Rouse	401 Lamme	327 N. Rouse
544 N. Rouse	314 N. Rouse	330 N. Rouse	513 N. Rouse	503 N. Rouse
	322 N. Rouse	404 N. Rouse	539 N. Rouse	512 / 514 N. Rouse**
	416 N. Rouse	424 N. Rouse	613 N. Rouse	515 N. Rouse
	534 N. Rouse	506 N. Rouse	808 N. Rouse	517 N. Rouse
	601 N. Rouse	526 N. Rouse		521 N. Rouse
		810 N. Rouse		530 N. Rouse
		816 N. Rouse		603 N. Rouse
		822 N. Rouse		605 N. Rouse
				616 N. Rouse
				620 N. Rouse
				621 N. Rouse
				704 N. Rouse
				722 N. Rouse
				802 N. Rouse

Notes: Residences not listed in this table lie in excess of 20 feet from the proposed construction limits.
* Full Acquisition implies that the existing structure is in conflict with the proposed construction limits.
** Same building

Table 3.2
Right-of-Way Impacts on Commercial Properties

Full Acquisition*	0 to 5 feet from structure	5 to 10 feet from structure	10 to 15 feet from structure
1227 (1237) N. Rouse**	321 Main	34 N. Rouse	907b N. Rouse***
	411 Main	39 N. Rouse	907c N. Rouse***
	101 N. Rouse	906 N. Rouse	
	109 N. Rouse		
	907a N. Rouse		
	907d N. Rouse		
	1301 N. Rouse		

Notes: Businesses not listed in this table lie in excess of 15 feet from the proposed construction limits.
* Full Acquisition implies that the existing structure is in conflict with the proposed construction limits.
** Two addresses because of a difference in physical and CAMA address
*** Different buildings.

Figure 3-3
Unavoidable Impact to Structures from the Preferred Alternative

Notes:
Figure is not to scale.

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Utilities

A number of public utilities have been identified within this corridor that may be impacted by the new right-of-way limits of the proposed project. These utilities include city water and sewer, electrical and telecommunications transmission lines, natural gas and petroleum pipelines, and cable television lines. Any utility relocation would be coordinated with the line's owner, and done prior to this proposed project's construction. Notification of service interruptions due to these relocations would be the responsibility of these utility lines' owners. Disruptions are normally minor and are usually limited to the customers on the affected lines.

Mitigation

There would be right-of-way acquisitions under the Preferred Alternative. All lands needed for right-of-way under the proposed action which are in private ownership would be acquired in accordance with both the *Uniform Relocation Assistance and Real Property Acquisition Act* of 1970 (P.L. 91-646), and the *Uniform Relocation Act Amendments* of 1987 (P.L. 100-17). Compensation for right-of-way acquisitions would be made at "fair market value" for the "highest and best use" of the land.

Both the local housing and rental market were researched to determine the effect of acquisitions. According to the Gallatin Association of Realtors, in 2006, the median home price in the corridor was approximately $200,000 and the average home price in Bozeman was approximately $258,000. According the U.S. Bureau of the Census, as of 2000, 94 percent of housing units in Bozeman were occupied, 43 percent by owners and 57 percent by renters. As of 2000, 700 properties were vacant, 46 percent of which were for rent, indicating that ample housing stock is currently available for relocated residents.

3.5 Economic Conditions

The Bozeman area is experiencing rapid economic growth. According to the Gallatin Development Corporation, approximately 4,545 firms operated in Gallatin County in the first quarter of 2005. This represents an increase of approximately 3.8 percent over 2004. Major sectors of the economy include retail, real estate, services, manufacturing, professional and technical, and construction.

The Rouse Avenue corridor provides access to Bozeman's downtown business district as well as a number of businesses along Rouse Avenue itself. As shown in Figure 3-4, Rouse Avenue, North 19th, and North 7th Avenues serve as the three main north-south routes in Bozeman. Because this corridor is key for access to businesses both along Rouse as well as downtown, improvements in this corridor would be expected to have a positive impact on economic conditions in Bozeman.

Figure 3-4
Bozeman North-South Corridors

Mitigation

Overall, the proposed action would have a favorable effect on the area's economic conditions. No mitigation is required.

3.6 Environmental Justice

Under Title VI of the 1964 Civil Rights Act and related statutes, federal agencies are required to ensure that no person is excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, disability, or religion.

Executive Order (E.O.) 12898 requires each federal agency to make achieving environmental justice part of its mission "by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations."

There are three fundamental environmental justice principles:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

According to Census data, areas along the Rouse Avenue corridor are characterized by lower incomes, lower rates of homeownership, and older and less valuable housing stock. As shown in Figure 3-5, the following three Census Block Groups were analyzed for this proposed project:

Census Tract 6, Block Group 1 Bordered by the Mill Ditch on the east, E. Peach Street on the south, N. 8th Avenue on the west, and E. Griffin Drive on the north. Rouse Avenue bisects this Census Block Group.

Census Tract 7, Block Group 1 Bordered by Rouse Avenue on the west, Main Street on the south, I-90 on the east, and E. Peach Street on the north.

Census Tract 7, Block Group 2 Bordered by Rouse Avenue on the east, Main Street on the south, N. 3rd Avenue on the west, and Peach Street on the north.

Although these Census Block Groups are larger than the study area for this EA, the Census figures relating to these areas provide an overview of general socioeconomic conditions in the corridor, as shown in Table 3.3. Census data were not considered for the portion of Bridger Drive between Griffin Drive and Story Mill because this area falls into a large Census tract that includes land far to the north and west of Griffin Drive. Data for this Census tract is not representative of the Rouse Avenue corridor.

Figure 3-5
Census Block Groups

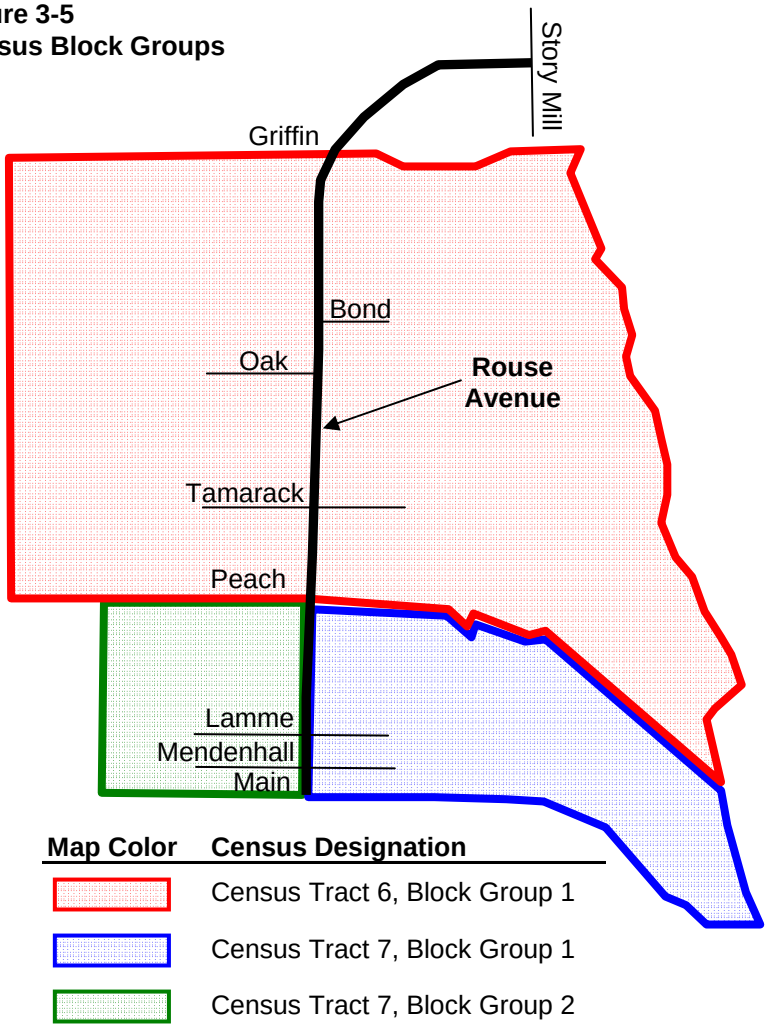


Table 3.3
Census Block Data

	Bozeman Median	Tract 6, Block Group 1	Tract 7, Block Group 1	Tract 7, Block Group 2
Median Age of Structure*	1973	1962	1948	1945
Income*	$32,156	$18,510	$22,467	$26,739
Homeownership*	42.9%	33.4%	36.5%	28.4%

*US Census Bureau, 2000 Census

Mitigation

Right-of-way impacts are evenly distributed throughout the corridor, and two residences and one business would require full acquisition under the Preferred Alternative. From field observations and available data, it does not appear that these full acquisitions are either low-income or minority owned/occupied properties. Due to the limited number of acquisitions and the nature of these homes and businesses, both the No-Build Alternative and the Build Alternatives are in accordance with E.O. 12898, and would not create disproportionately high and/or adverse impacts on the health or environment of minority and/or low-income populations. These alternatives also comply with the provisions of Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000(d), as amended) under the FHWA's regulations (23 CFR 200).

3.7 Air Quality

The proposed project is located in an unclassifiable/attainment area of Montana for air quality under 40 CFR 81.327, as amended. As such, this proposed project is not covered under the EPA's "Final Rule" of September 15, 1997 on Air Quality Conformity.

The EPA has also identified a group of 21 Mobile Source Air Toxics (set forth in EPA's final rule, *Control of Emissions of Hazardous Air Pollutants from Mobile Sources*) and extracted six priority Mobile Source Air Toxics (MSATs) considered to be transportation toxics. The EPA has issued a number of regulations that will dramatically decrease MSATs through cleaner fuels and cleaner engines. According to an FHWA analysis, even if vehicle miles of travel (VMT) increase by 64 percent, reductions of 57 percent to 87 percent in MSATs are projected from 2000 to 2020.

Under the FHWA interim guidance issued for air toxic analysis in NEPA documents, the Rouse Avenue project would be classified as a minor widening project for which the ultimate traffic level is predicted to be less than 150,000 average vehicles per day. The EPA and FHWA have acknowledged technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects and how this may prevent meaningful or reliable estimates of MSAT emissions and effects of specific projects. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions.

Because the estimated VMT under both the No Build and Preferred Alternatives are nearly the same, varying by less than one percent, it is expected that there would be no appreciable difference in overall MSAT emissions between the alternatives. The roadway widening proposed as part of the Preferred Alternative would have the effect of moving some traffic closer to nearby homes, schools and businesses; therefore, there may be localized areas where ambient concentrations of MSATs could be higher than the No Build Alternative. This localized impact could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions).

Overall, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be

substantially lower than today. Local conditions may differ from the national projections in terms of fleet mix and turnover, VMT 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 area are likely to be lower in the future in nearly all cases.

Mitigation
No mitigation is required.

3.8 Pedestrians and Bicyclists

As explained in Chapter 1, pedestrian and bicycle traffic in the vicinity of the proposed project is currently limited (See Figure 1-4). Part of the Purpose and Need of the proposed project is to improve access and mobility in the corridor for pedestrians and bicyclists. The Preferred Alternative would do this by providing consistent sidewalks throughout the urban portion of the corridor, consistent bike lanes throughout the corridor, and require a shared pedestrian/bicycle path through the rural portion of the corridor. All of these facilities in the urban portion would meet ADA requirements by providing a minimum five-foot sidewalk, 36-inch curb ramps, appropriate drainage in walking areas, and detectable warnings at cross walks.

The Preferred Alternative would include five-foot sidewalks through the entirety of the urban portion, from Main Street to the East Gallatin River crossing. To continue pedestrian facilities in the rural portion, the Preferred Alternative would include construction of a shared ten-foot pedestrian and bicycle path on the north side of Bridger Drive, and a recommendation that the City require adjacent private parcels to construct a similar path on the south as those parcels are developed in the future. Neither MDT nor any other governmental agency can construct on the south side without additional right-of-way or compensation to adjacent property owners.

During the development of alternatives, attempts were made to accommodate both a pedestrian trail and separated bike paths along both sides of the route in the rural portion of the corridor. This could not be accomplished without substantial right-of-way acquisition in order to comply with the City's current standards regarding a safe distance of separation between pedestrian and bicycle facilities and another roadway intersection. Construction of the path with adequate separation can be accomplished on the north side of Rouse in the rural portion, but would need to be constructed outside the roadway right-of-way on the south to provide adequate separation.

The Preferred Alternative would also include five-foot bicycle lanes throughout the corridor from Mendenhall to Story Mill Road.

The No-Build Alternative would not improve safety for pedestrians/bicyclists or motorists.

Mitigation
The Preferred Alternative would improve access for pedestrians and bicyclists throughout the corridor through the provision of bike lanes, ADA accessible sidewalks, and/or shared pedestrian/bicycle paths throughout the corridor. No mitigation is required.

3.9 Noise

This section provides a summary of the Traffic Noise Study report prepared for the proposed project (see list of Technical Reports in the Table of Contents of this document). The analysis was conducted in accordance with 23 CFR 772 and MDT *Traffic Noise Policy and Procedure Manual*, June 2001. According to the noise study report, seventy-five noise-sensitive receptors were identified within approximately 490 feet of the existing roadway centerline, including single-family residences, mobile homes, apartment buildings, a park, and an elementary school.

Traffic noise impacts are anticipated at seven receptors under the No Build Alternative and at 13 receptors under the Preferred Alternative.

According to the Federal Aid Policy Guide, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (23 CFR 772), this project is defined as a Type I project as a "proposed Federal or Federal-aid highway project . . . which increases the number of through-traffic lanes and therefore a noise analysis is required." The FHWA's Traffic Noise Model (TNM) Version 2.5 computer program was used to predict the traffic noise levels due to the No-Build Alternative and the project alternatives. Table 3.3 lists existing and predicted noise levels for the No-Build Alternative and the Preferred Alternative.

Table 3.4
Receptors and Predicted Noise Levels for the No-Build and Preferred Alternatives*

Receptor	Description	No-Build Alternative $L_{eq}(h)$, Present Year 2005 (dBA)	No-Build Alternative $L_{eq}(h)$, Design Year 2030 (dBA)	Preferred Alternative $L_{eq}(h)$, Design Year 2030 (dBA)
MH1	Mobile home	60	63	63
MH2	Mobile home	61	64	64
R1	Single family residence	61	64	65
MH3	Mobile home	61	64	64
MH4	Mobile home	61	64	64
MH5	Mobile home	59	62	62
MH6	Represents two mobile homes	61	64	64
MH7	Represents two mobile homes	61	64	64
MH8	Represents two mobile homes	61	64	64
MH9	Mobile home	61	64	64
MH10	Represents two mobile homes	61	64	64
MH11	Mobile home	61	64	64
MH12	Mobile home	58	61	62
R2	Single family residence	60	63	63
R3	Single family residence	56	59	59
R4	Single family residence	62	65	65
R5	Single family residence	61	64	64
R6	Single family residence	62	65	65
R7	Single family residence	63	66	66
R8	Single family residence	63	66	66
R9	Single family residence	63	66	67

Table continues

Table 3.4
(Continued)

Receptor	Description	No-Build Alternative $L_{eq}(h)$, Present Year 2005 (dBA)	No-Build Alternative $L_{eq}(h)$, Design Year 2030 (dBA)	Preferred Alternative $L_{eq}(h)$, Design Year 2030 (dBA)
R10	Single family residence	62	65	66
R11	Single family residence	62	65	65
R12	Single family residence	61	64	64
R13	Single family residence	61	64	64
R14	Single family residence	60	63	63
R15	Single family residence	61	64	64
R16	Single family residence	61	64	64
R17	Single family residence	61	64	65
R18	Single family residence	62	65	65
R19	Single family residence	62	65	65
R20	Single family residence	62	65	65
R21	Single family residence	61	64	64
R22	Single family residence	62	65	65
R23	Single family residence	62	65	65
R24	Single family residence	62	65	65
R25	Single family residence	63	66	66
R26	Single family residence	62	65	65
R27	Single family residence	63	66	66
R28	Single family residence	60	63	63
R29	Single family residence	61	64	64
A1	Apartment building	56	59	59
R30	Single family residence	60	63	63
R31	Single family residence	62	65	66
R32	Single family residence	61	64	64
R33	Single family residence	61	64	64
R34	Single family residence	62	65	65
R35	Single family residence	61	64	64
A2	Apartment building	62	65	65
R36	Single family residence	62	65	65
R37	Single family residence	62	65	65
R38	Single family residence	61	64	64
R39	Single family residence	60	63	63
R40	Single family residence	61	64	64
A3	Apartment building	60	63	63
R41	Single family residence	63	66	66
A4	Apartment building	57	60	60
R42	Single family residence	60	63	63
R43	Single family residence	62	65	66
R44	Single family residence	59	62	62
R45	Single family residence	62	65	65
R46	Single family residence	61	64	64
A5	Apartment building	56	59	59

Table continues

Table 3.4
(Concluded)

Receptor	Description	No-Build Alternative $L_{eq}(h)$, Present Year 2005 (dBA)	No-Build Alternative $L_{eq}(h)$, Design Year 2030 (dBA)	Preferred Alternative $L_{eq}(h)$, Design Year 2030 (dBA)
R47	Single family residence	62	65	65
R48	Single family residence	62	65	65
R49	Single family residence	63	66	67
R50	Single family residence	62	65	66
R51	Single family residence	62	65	64
R52	Single family residence	62	65	66
R53	Single family residence	60	63	63
R54	Single family residence	62	65	64
R55	Single family residence	59	62	62
R56	Single family residence	62	65	66
P1	Creekside Park	59	62	62
S1	Hawthorne Elementary School	58	61	62

Source: Big Sky Acoustics, 2006
*Shaded cells indicate that the predicted traffic noise level meets or exceeds the traffic noise impact criteria (66 dBA).

Mitigation

Since traffic noise impacts were identified along Rouse Avenue, traffic noise abatement measures were considered, including modification of the Preferred Alternative, traffic management measures such as reducing the speed limit, the construction of noise barriers, and the use of quiet pavements.

Because the land adjacent to Rouse Avenue is heavily developed and the majority of the buildings are within approximately 60 feet of the existing centerline, shifting the roadway alignment would likely require additional right-of-way and removal of structures. Since the existing speed limit is already 25 mph, reducing the speed further would hinder the road's function as an urban minor arterial. The many driveways and cross streets intersecting Rouse Avenue would prohibit barriers from being effective, because the barriers could not be constructed to be continuous and long enough to block the line of sight to the road from receptor locations. Changes in the pavement surface to reduce the noise of vehicle tires rolling over the roadway are not effective on roads with vehicle speeds of approximately 30 mph or less. Accordingly, the evaluated mitigation measures are not practical or effective for the Rouse Avenue corridor.

3.10 Water Quality

The East Gallatin River is the discharge body for storm water, and is currently on the 303(d) list. The 303(d) list is defined by the U.S. Environmental Protection Agency (EPA) as "waters where one or more applicable beneficial uses have been assessed as being impaired or threatened, and a TMDL [Total Maximum Daily Load] is required to address the factors causing the impairment or threat." A TMDL is a defined amount of a particular pollutant that can be released to a given water body per day.

The quality of runoff from roadways is impacted by vehicle-related contaminants, such as motor oil, grease, and tire rubber. In addition, surface water runoff is impacted by herbicides and pesticides that may be used in landscaped or maintained areas along the roadway.

The East Gallatin River is impaired by phosphorus and nitrogen, although no TMDL has been established yet for this stream. Because phosphorus and nitrogen are generally pollutants associated with residential fertilizer and pet waste rather than roadway pollutants in an urban corridor, no treatment for these pollutants would be provided as part of this roadway improvement project. Final design for the storm water treatment would be conducted in cooperation with the City of Bozeman.

There would be an increase in the total surface area of paved road related to widening and reconstruction. This increase in total road surface area decreases the overall permeability of substrate and increases the rate and quantity of surface water runoff from the roadway. However, reconstruction of Rouse Avenue on the existing alignment would likely improve water quality runoff relative to current conditions by meeting the City's MS4 requirements. The reconstructed roadway would meet these more rigorous standards (e.g. with respect to grade, surface water runoff controls, sedimentation, and erosion control), and reduce impacts to surface water quality due to erosion and siltation.

Mitigation

Storm water systems designed for the Preferred Alternative would use Best Management Practices (BMP's) to treat storm water before it enters the East Gallatin River.

3.11 Wetlands

There are no wetlands within the project site. Bozeman Creek is a perennial Water of the U.S. as a result of its connection to another Water of the U.S., the East Gallatin River.

Mitigation

The proposed project would not affect any wetlands within the project site because no wetlands were identified. Pursuant to regulations following the *Talent Water* decision, impacts to Bozeman Creek would require further coordination with the COE. Refer to Section 3.21, Permits and Other Regulatory Requirements, for a description of this coordination.

3.12 Floodplains

E.O. 11988 and FHWA's floodplain regulation (23 CFR 650, Subpart A) require an evaluation of any proposed action to determine if any of its alternatives encroach on the "base" floodplain. The base floodplain is defined as the area that is encompassed by the 100-year floodplain.

The study corridor was most recently described in a 1988 Flood Insurance Study (FIS). As illustrated in Figure 3-6, the portion of the corridor between Main and Lamme lies within the 100-year floodplain. A portion of the corridor between Griffin and Story Mill also lies within the 100-year floodplain. The FIS reports that "flooding can occur from Bozeman Creek in any

season of the year." There are no major flood control structures on East Gallatin River, Bozeman Creek, or any of their tributaries. The FIS notes that "the bridges under Lamme Street and North Rouse Avenue do not have the capacity of upstream bridges. Flows from less than a 10-year flood will overtop these bridges."

There are four structures crossing water bodies within the project area. Three of these structures cross Bozeman Creek. The first is a single span, steel I-beam bridge that serves a single family residence. This bridge would be perpetuated unless MDT and the owners agree to arrange another means of access during the right-of-way acquisition phase of the project, in which case the structure could be eliminated.

There are two vertical abutment bridges (three-sided concrete structures) which convey Bozeman Creek. The first crosses under Rouse Avenue and the second crosses under Peach Street.

At the north end of the project, the recently replaced bridge over the East Gallatin River is in sound condition and would be used as is with minor modifications made to add a pedestrian crossing on the south side of the structure.

Mitigation

MDT and the City of Bozeman are currently discussing design options for future water conveyance structures that would improve overall hydraulic function and reduce flood risk. Impacts from all hydraulic design options would be consistent with those disclosed for the Preferred Alternative and would be designed to have no detrimental impact on the flood risk in Bozeman. Existing hydraulic conditions would be maintained or improved throughout the corridor through the installation of new conveyance structures agreed upon by MDT and the City of Bozeman, and in coordination with resource agencies.

No design or construction activities are contingent upon City action or approval of the conveyance structures; however, a floodplain development permit would be required for construction in the floodplain in the Rouse Avenue corridor and is available from the City of Bozeman.

Figure 3-6
Floodplains

3.13 Waterbodies, Wildlife Resources, and Habitat

The Biological Resources Report (BRR) prepared for the proposed project provides a detailed accounting of the terrestrial and aquatic species and species of concern that are known to occur or could occur within the proposed project area. The information below is a summary of potential impacts and mitigation measures for biological resources.

Wildlife Resources

Based on observations during the site investigation, several species of songbirds and birds of prey occur within the Rouse Avenue corridor. Although bird species use the vegetation along Rouse Avenue for roosting, foraging, breeding, and/or nesting, there is similar habitat available along waterways within one mile of the project site (Bridger and Rocky Creeks, East Gallatin River). Therefore the habitat along Rouse Avenue would not be considered "critical" for the survival of any specific avian species.

White-tailed deer and occasionally mule deer use stream corridors, backyards, and city streets within the Bozeman city limits as movement corridors and for access to water. No deer trails or tracks were observed within the investigation corridor. No other wildlife or signs were observed at the time of the investigation; however, small mammals such as squirrels, mice, skunk, rabbit, and raccoon also frequent the study area.

Eight species of fish are known to exist within the Rouse Avenue Bozeman Creek reach: brown trout, mottled sculpin, mountain whitefish, rainbow trout, long-nosed dace, long-nosed sucker, white sucker, and mountain sucker. All species except brown and rainbow trout are native. Brown trout and mountain whitefish are fall spawners (September-December), rainbow trout spawn in the spring-early summer (March-June), mottled sculpin spawn in early summer (May-June), white sucker spawn in June and the long-nosed sucker spawn from May to July.

Mitigation

There would be minimal impact to wildlife in the area of the study based on availability of adjacent habitat. To prevent direct impacts in the taking of migratory birds, nestlings, or eggs, it is recommended that tree removal occur before or after the nesting season (May 1 – August 1).

To avoid impacts to spawning fish, fish passage will be maintained and in-stream timing restrictions may be recommended by MFWP in coordination of the Stream Protection Act (SPA)124 process.

Habitat

The principle biological resources within the project site include a perennial stream and mature riparian and landscape vegetation. Migratory bird species, deer, and city-dwelling small mammals would be expected to use the corridor for activities such as watering, foraging, and roosting; however, the project corridor is already fully developed and presents very limited habitat. Ultimately, this corridor is not critical for their survival given the adjacency of other stream and river corridors of higher quality habitat.

Mitigation
Given that the habitat in the project corridor is not critical habitat for wildlife species that are present, no mitigation is necessary.

Species of Concern

Based on the historical and current information and results of the field survey, the proposed project would not impact any wildlife or plant species of concern.

Mitigation
None required.

Noxious Weeds

Nine species of noxious weeds were observed within the investigation corridor. They include Canada thistle, common tansy, Dalmatian toadflax, field bindweed, houndstongue, musk thistle, ox-eye daisy, poison hemlock, and spotted knapweed.

Mitigation
All construction activities are required to comply with the Montana Noxious Weed Law, MDT Standard Specification 107.11.5, titled Noxious Weed Management, follow the requirements of the Noxious Weed Management Act, Title 7, Chapter 22, Part 21, and any Gallatin County requirements.

3.14 Threatened/Endangered (T/E) Species

Based on the MNHP database reports, threatened, endangered, or proposed plant or animal species do not exist within the Rouse Avenue study area. It is likely that bald eagles occasionally fly over the site or use the mature trees as perches en route to other adjacent river corridors such as the East Gallatin River. Disturbance to any mature vegetation would have no effect to the viability of the threatened bald eagle.

Mitigation
It is determined that implementation of the proposed project would not affect any threatened or endangered plant or animal species; therefore, no mitigation is necessary.

3.15 Hazardous Wastes

Several Leaking Underground Storage Tank (LUST) sites were identified in the records search performed for the study area. One active site is an MDT facility located at 907 N. Rouse. One well at this site had benzene at 7.7 parts per billion (ppb) in 2000, above the water quality maximum contaminant level (MCL) of 5.0 ppb. Two other inactive LUST sites were closed prior to the formation of the Closure Committee in 1997. These two sites are Gene Ballinger at 917 Bridger Drive, and Farmers Union Central Exchange at 318 Griffin Drive. Telephone conversations with individuals involved with the sanitary sewer replacement work on Rouse Avenue in 2004 indicate no petroleum contamination was identified.

Discussions with MDT personnel at 907 N. Rouse Ave. indicate that traffic paint had been historically dumped at this location. Previous construction activities on Oak Street, immediately north of the MDT property, yielded soil samples that contained chromium.

Mitigation

If the proposed project is approved and constructed, a field engineer will be on-site and observe excavations adjacent to the sites of concern in case any contaminated soils are encountered. Disposal of any soils potentially contaminated with chromium or hydrocarbon fuel compounds would be done in accordance with guidance and approvals obtained from the Montana Department of Environmental Quality (DEQ), which are decided on a case-by-case basis. Special provisions would be written into the construction contract for the proposed project to address handling of contaminated material in the event it is encountered. Additionally, petroleum resistant pipe materials would be utilized in areas where contamination is encountered, as recommended by the Montana DEQ in Technical Document #16.

3.16 Cultural/Archaeological/Historic Resources

According to a Cultural Resources Inventory (and re-evaluation) prepared for the proposed project, there are a total of 10 historic sites in the Rouse Avenue corridor. Three of these sites are potentially eligible for listing on the National Register of Historic Places (NRHP) as individual sites, and the remainder are considered contributing to the North Rouse Avenue Historic District in the 500 Block of Rouse Avenue. Two sites within the corridor were previously listed: the Bozeman Hotel (24GA1739) and the Northern Pacific Railway Main Line (24GA1096). These 10 total sites are listed in Table 3.5 and illustrated in Figure 3-7.

Sites that are recommended NRHP eligible have been avoided wherever possible. Where complete avoidance was not possible, the conceptual design was modified to minimize the potential impacts.

A copy of the SHPO concurrence on these cultural resource impacts is contained in Appendix A.

Table 3.5
NRHP-Eligible Sites and Findings of Effect

Site*	Site Number	Effect
321 E. Main (Bozeman Hotel)	24GA1739	No Effect
102 N. Rouse (Hawthorne School)	24GA1688	No Adverse Effect
North Rouse Avenue Historic District		
503 N. Rouse Avenue	24GA1701	No Adverse Effect
507 N. Rouse Avenue	24GA1703	No Adverse Effect
513 N. Rouse Avenue	24GA1704	No Adverse Effect
515 N. Rouse Avenue	24GA1705	No Adverse Effect
517 N. Rouse Avenue	24GA1706	No Adverse Effect
521 N. Rouse Avenue	24GA1707	No Adverse Effect
526 N. Rouse Avenue	24GA1709	No Adverse Effect
Northern Pacific Railway Main Line	24GA1096	No Effect

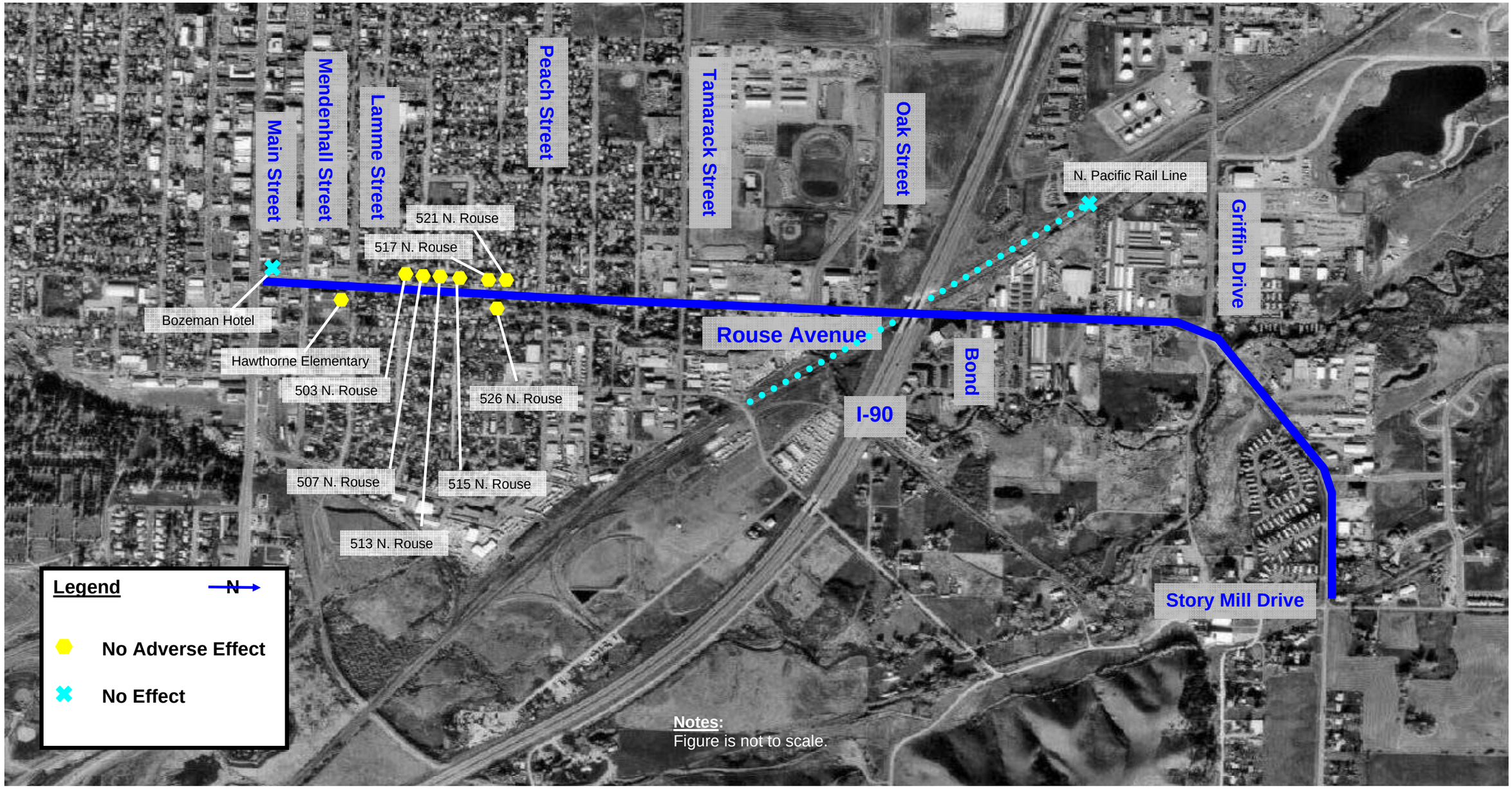
*Slaughter Rental was also reviewed in the Determination of Effect, but is outside the Area of Potential Effect for this proposed project, and is not discussed further in this EA.

Full descriptions of impacted properties are provided in Chapter 4 - Section 4(f) Resources.

Mitigation

No mitigation required.

Figure 3-7
Historic Resources



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3.17 Visual

For the purposes of this discussion, the project area has been divided into four segments, each with distinct landscape characteristics. Following the descriptions of these four segments, there is a also a brief discussion of woody vegetation in the corridor, which is a visual resource on Rouse Avenue and in Bozeman's Northeast Neighborhood and would be impacted by the project.

Intersection with Main Street to Intersection with Lamme Street

This segment of Rouse Avenue is located in the downtown business district. Older, multi-level commercial buildings line much of Main Street, restricting peripheral views. Mountains are visible in the distant background south of the intersection of Rouse and Main. A few trees are scattered along the street to the north and in a small park located on the southwest corner of the Rouse and Main intersection. Within this segment, the street is fairly wide and lined with sidewalks on either side.

Rouse and Main

Intersection with Lamme Street to Intersection with Tamarack Street

Rouse and Lamme

This is a predominantly residential segment characterized by older houses with relatively shallow setback distances. Mature trees line both sides of the street, limiting peripheral views and creating a feeling of enclosure along this segment of the corridor. The street width narrows midway between the intersections at Lamme and Peach Streets due to the proximity of the Bozeman Creek, which closely parallels Rouse Avenue throughout most of this segment. The street widens again just south of Peach Street, allowing slightly less restricted views of the street and bordering residences. Mountains are visible in the extended background view to the north.

Intersection with Tamarack Street to Intersection with Griffin Drive

This segment is characterized by commercial and light industrial development, with utility poles and large buildings closely lining the street. Vegetation in this segment thins considerably, although mature trees still border this segment of Rouse Avenue. The open nature of this segment affords more expansive peripheral views of the skyline and foreground views north to the mountains. Approaching the intersection with I-90 from the south, the immediate foreground view is dominated by the overpass structure. North of I-90, the foreground again expands, allowing broad views of the sky and mountains to the north.

Rouse and Tamarack

Intersection with Griffin Drive to Intersection with Story Mill Drive

This segment is characterized by mixed commercial and residential development. Traveling northeast from the intersection of Rouse and Griffin Drive, the foreground view is dominated by mountains. The roadway is relatively wide and vegetation along this segment is generally set back from the roadway, allowing broad peripheral views. Developments in the southwest portion of this segment, including commercial buildings and the Boys and Girls Ranch, are also set back from the roadway. Peripheral views narrow northeast of the bridge over the Gallatin River where a large mobile home park is located closer to the street.

Bridger Drive

Vegetation in the Corridor

Vegetation within the Rouse Avenue corridor was inventoried within 150 feet of the existing shoulders between Main Street and Griffin Drive. Nearly 100 vegetation species and over 30 tree species were identified and inventoried. Nearly 650 trees of varying type, size, and maturity were inventoried within the 150 foot range on either side of the existing alignment, with just over 400 lying within 50 feet of the existing alignment.

The Preferred Alternative would require construction disturbance and/or new right-of-way of varying widths throughout the corridor. This disturbance area varies between 15 and 30 feet on either side of the existing transportation facilities. It is not possible to identify impacts to specific trees until more detailed plans are developed; however, it is estimated that over 125 trees could be impacted directly due to the construction activities associated with the Preferred Alternative.

Mitigation

The proposed project is anticipated to have an overall positive effect on the visual character of the corridor through the construction of landscaped boulevards through the residential portions; however, there will be a notable loss of large tree cover in the immediate vicinity of the existing roadway. The City of Bozeman's arborist would be consulted during preliminary engineering to evaluate the condition of existing trees and ensure that appropriate consideration is given to trees and reasonable measures are taken to minimize impacts to these resources. The arborist would also be asked to propose potential mitigation strategies for unavoidable impacts to trees within the corridor. According to a June 2006 phone conversation with Elizabeth Galli-Noble, who represents the Bozeman Tree Board, the Board would like to work with MDT to ensure that trees are replanted within the corridor post-construction. The Tree Board has offered to write grants to partially fund the cost of the replanting. To that end, the Tree Board has asked to be kept apprised of project development progress, in advance of construction, to have time to write grants for tree-planting.

3.18 Construction Impacts

Construction activities from the proposed Build Alternatives would cause temporary inconveniences to area residents and businesses. These would occasionally result in longer travel times, detours, temporary closures, and noise and dust due to the use of heavy machinery. These disruptions would occur intermittently throughout the construction period. The existing roadway would remain in use for continued access during the construction process; therefore, traffic interruptions would be minimized.

Mitigation

Asphalt plants and gravel crushers that may be required for roadway construction for any of the alternatives would require air quality permits to be obtained by the contractor. Construction activities are also required to use dust suppression and control measures to minimize short-term impacts related to construction dust.

There would be minor, temporary noise impacts related to construction of any of the alternatives. The project's contractor would be subject to all state and local laws to minimize construction noise by having mufflers on all equipment. Dust control would also be implemented by using either water, or another approved dust-suppressant. During construction, surface water runoff could be contaminated by spills of petroleum products, lubricants, and hydraulic fluid from construction equipment. There would be a spill prevention and emergency containment plan made to provide for mitigation of any impacts related to such spills. In general, BMP's would be used to minimize the effect of sedimentation and/or runoff during the roadway construction periods.

There is potential for short-term water quality impacts due to increased erosion and sedimentation during construction activities. Mitigation of these impacts is achieved through engineering controls, such as grading, revegetation, and various BMP's. These mitigation measures would be included in the Storm Water Pollution Prevention Plan (SWPPP) to ensure that any impacts are minimal. Field monitoring/oversight would be planned.

Given the volume of traffic and the fully developed residential, retail, and commercial areas along this route, MDT will require a staging and construction sequencing plan to ensure that reasonable access is maintained to all residents and businesses during construction. All advance warning and detour signing would be in accordance with the Manual on Uniform Traffic Control Devices. Therefore, construction impacts from any of the proposed Build Alternatives would be minimized.

3.19 Cumulative Impacts

This section provides a general assessment of impacts from past, present, and reasonably foreseeable projects in the area surrounding the proposed Rouse Avenue project that may have additive impacts on the social, economic, and environmental impacts identified in this EA. The Rouse Avenue corridor has been substantially modified by development, and over 100 years of residential, commercial, and light industrial land uses. Through this corridor, Bozeman Creek

has been channelized and the banks completely armored concurrent with public and private development projects over the past century.

More recent projects located near the Rouse Avenue corridor are identified below.

- *Sanitary Sewer Installation* – the City of Bozeman replaced the sewer line under Rouse Avenue from Main Street to Griffin in 2004.

- *Traffic Flow Reconfiguration* – the City of Bozeman reconfigured Rouse between Babcock and Main Street from a north-bound one-way to a two-way street in 2005.

- *Rouse Avenue Overlay* – MDT Maintenance completed an overlay on Rouse Avenue from Main to MP 2.9 in 2005.

- *Rouse Avenue Overlay* – MDT Maintenance completed an overlay on North 7th from Main to Griffin in 2006.

- *Main Street – Grand Avenue to Haggartey Lane* is a mill, overlay, seal, and coat project. Estimated to be completed in the summer of 2008.

- *Bozeman Citywide Signal Upgrade (STPP-CM 1299(14))* is a signal upgrade project, mostly on Main Street. Estimated to be completed in the summer of 2008.

- *East Bozeman Interchange Wetland Mitigation* is a wetland development project located directly adjacent to the East Main Interchange. The estimated letting date is spring 2009.

- *I-90 Bridge Replacement* is a project to replace the I-90 bridge over Rouse Avenue. The estimated letting date is summer 2010.

- *Griffin Drive - N 7th to Rouse (CN 6256)* is a seal and cover project. The estimated letting date is summer 2009.

In addition to the above MDT and City of Bozeman projects, there are housing developments planned at the north end of the corridor. City records have also been reviewed which identified over 70 projects completed, planned or permitted from 2003 through 2007. There are an additional 250 projects in various stages in the general vicinity of the Rouse Avenue corridor. None of these projects, which range from signing approvals to small building remodels or additions, would have a cumulative effect on the Rouse corridor.

Based on the fact that Rouse Avenue is in a highly developed corridor and that the proposed project is not anticipated to induce new growth or development, the proposed roadway improvements are not anticipated to individually or cumulatively, when considered with the other projects, have any substantial cumulative impacts.

3.20 Indirect Impacts

Indirect impacts from this proposed project range from the loss of on-street parking to increased stormwater runoff from the increased pavement width. These indirect impacts are fully addressed through design considerations discussed previously in this EA. Other indirect impacts may be those related to a change in land use from improvements to this route.

Over the past decade, there has been a substantial amount of research conducted on the indirect effects of transportation improvements on land use. There are basically two schools of thought on the subject: that the addition of roadway capacity induces new growth and results in increased congestion, or that construction of additional roadway capacity is merely a response to the historical land consumption trends and patterns which have favored suburban decentralization and dispersion. In practice, neither is wholly accurate. Land use and transportation are inextricably intertwined and frequently cyclical in nature with improved accessibility increasing land values, land values affecting their use, changing uses affecting the need for transportation investments, roadway improvements further changing access and so on.

It is also important to recognize that the effects of transportation in facilitating physical development are not necessarily the same as its effects on economic growth. If a region is growing economically, development will occur somewhere within or near it. Combined with the effects of land use and zoning policies which are controlled by each local jurisdiction, transportation investments may influence the location of growth, but they alone do not cause the growth.

Traffic on Rouse Avenue has been growing at a rate of about 2.8 percent a year. This growth rate is anticipated to continue regardless of any improvements on Rouse itself. Induced travel is a term used by economists to describe the additional demand for travel that occurs as the generalized cost of travel decreases.[1] The theory of induced vehicle travel suggests that increases in carrying capacity of a specific highway corridor would result in an increased level of vehicle traffic due to a decrease in the cost of travel, especially the time-costs of travel. Generally, induced travel applies to new highway carrying capacity; for example, the widening of a highway to improve LOS. Rouse Avenue is already defined as an Entryway Corridor by the City of Bozeman and is the major north-south thru-way on the east side of the City. Improving LOS on this road is not anticipated to induce growth; rather, it would maintain access for residents, commercial traffic, and recreational users.

Research compiled by the Transportation Research Board indicates that transportation variables are no more critical to location decisions than such factors as housing type, size, and cost, as well as real or perceived differences in neighborhood characteristics such as crime rates and the quality of schools. Moreover, lifestyle and life-cycle variations have been found to be equally important as (and in some cases much more important than) transportation determinants of location and land use choices.

[1] FHWA. 2005. Induced Travel: Frequently Asked Questions. http://www.fhwa.dot.gov/planning/itfaq.htm

The urban portion of the Rouse corridor is already built-out and does not provide the opportunity for infill growth. The northern, or more rural portion of the corridor, has some room for growth. Since the project lies entirely within the city limits, the direction of future growth will be determined more by zoning and permitting by the City of Bozeman than by the widening of Rouse Avenue.

Based on this information, this project will not induce significant land use changes or promote unplanned growth. There will be no significant effect on access to adjacent properties or present traffic patterns.

3.21 Permits and Other Regulatory Requirements

The proposed action would be in compliance with both the water quality provisions of 75-5-318 M.C.A. for Section 318 authorizations, and stream protection under Sections 87-5-501 through 509 M.C.A., inclusive. An on-site review of the proposed project area would be conducted with representatives from regulatory agencies if necessary. All comments, suggestions, and/or conditions resulting from review of existing data and/or on-site inspections would be documented, included in the proposed project's files, and taken into account in the final design specifications.

The proposed action would require the following permits or authorizations:

- A Section 402/Montana Pollutant Discharge Elimination System (MPDES) authorization from the DEQ's Permitting & Compliance Division. The Preferred Alternative would require new right-of-way and require an MPDES construction phase permit, which is issued in response to the 1987 re-authorization of the Clean Water Act (33 U.S.C. 1251-1376, as amended). The Clean Water Act requires the U.S. Environmental Protection Agency to institute a National Pollutant Discharge Elimination System (NPDES) permitting program for storm drainage systems or to approve the state's programs. EPA approved Montana's program in 1987.

  Obtaining the MPDES permit requires development of a Storm Water Pollution Prevention Plan (SWPPP) that includes a temporary erosion and sediment control plan. The erosion and sediment control plan identifies BMP's as well as site-specific measures to minimize erosion and prevent eroded sediment from leaving the work zone.

- Section 404 Permit and SPA124 notification. The project would impact limited reaches of Bozeman Creek, a perennial Water of the U.S. These impacts would be limited to small areas of bank disturbance upstream and downstream of locations requiring bridge and culvert replacement. Best Management Practices would be followed to prevent dirt and debris from entering the stream where adjacent to construction activities. All necessary permits and notifications would be required prior to the commencement of any disturbance to the streambed or ordinary high-water marks.

- Floodplain development permit. Though the project would not impact flood conditions in the City of Bozeman, a floodplain development permit would be required because work would be conducted in the floodplain.

All work would also be in accordance with the Water Quality Act of 1987 (P.L. 100-4), as amended.

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4.0 SECTION 4(f) *DE MINIMIS* IMPACT DETERMINATION

Section 4(f) was created when the U.S. Department of Transportation was formed in 1966. It was initially codified in the U.S. Code at 49 U.S.C. 1653(f) (or Section 4(f) of the USDOT Act of 1966). Later that year, 23 U.S.C. 138 was added. In 1983, Section 1653(f) was reworded and recodified at 49 U.S.C. 303. These two statutes have no real practical distinction and are still commonly referred to as "Section 4(f)."

Section 4(f) declares that "[i]t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that "[t]he Secretary [of Transportation] shall not approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park area, refuge, or site) unless:

1) there is no prudent and feasible alternative to using that land; and

2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."

Congress amended Section 4(f) in 2005 when it enacted the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Section 6009 of SAFETEA-LU added a new subsection to Section 4(f), which authorizes FHWA to approve a project that results in a *de minimis* impact to a Section 4(f) resource without the evaluation of avoidance alternatives typically required in a Section 4(f) Evaluation. Section 6009 amended 23 U.S.C. 138 to state:

> The requirements of this section shall be considered to be satisfied and an alternatives analysis not required if the Secretary determines that a transportation program or project will have a *de minimis* impact on the historic site, parks, recreation areas, and wildlife or waterfowl refuges. In making any determination, the Secretary shall consider to be a part of the transportation program or project any avoidance, minimization, mitigation, or enhancement measures that are required to be implemented as a condition of approval of the transportation program or project. With respect to historic sties, the Secretary may make a finding of *de minimis* impact only if the Secretary has determined in accordance with the consultation process required under Section 106 of the National Historic Preservation Act that the transportation program or project will have no adverse effect on the historic site or there will be no historic properties affected by the transportation program or project; the finding has received written concurrence from the State Historic

Preservation Officer; and the finding was developed in consultation with the parties consulted under the Section 106 process.

4.1 Coordination

As discussed in the EA for this proposed project, one historic NRHP-eligible property would be impacted by the Preferred Alternative. *As stated in the Guidance for Determining De Minimis Impacts to Section 4(f) Resources* (FWHA 2005), SHPO must concur in writing with the Section 106 "no adverse effect" determination and must be informed that FHWA intends to make a *de minimis* finding based on the Section 106 effect determination. Consulting parties under Section 106 must also be informed of the *de minimis* finding. MDT submitted a letter to coordinate with SHPO requesting a determination of effect on several properties in the Rouse Avenue corridor. SHPO concurred with the "no effect" and "no adverse effect" determinations on each property listed in the corridor (see correspondence in Appendix A). FWHA subsequently made a *de minimis* finding with respect to the Hawthorne Elementary School and the Northern Pacific Railroad. Since that time, it has been determined that the railroad crossing could be accommodated within the existing right-of-way resulting in no "use" of this Section 4(f) property.

There would be no parks, recreation areas, or wildlife or waterfowl refuges that would be converted to a transportation use by the Preferred Alternative.

4.2 Proposed Action

The proposed action is a capacity improvement project on Rouse Avenue and a portion of Bridger Drive within the City of Bozeman. The work would include widening of the roadway, turnbays at major intersections, boulevards, sidewalks, handicap-accessible ramps, curb and gutter, signing and pavement markings, facilities for pedestrians and bicyclists, and new traffic control at key intersections. The purpose of the proposed project is to increase the capacity of Rouse Avenue to improve vehicular Level of Service (LOS) and enhance bike and pedestrian travel within corridor.

4.3 Section 4(f) Properties

There are 11 properties in the Rouse Avenue corridor that are protected by Section 4(f) including historic buildings, a historic rail line, and a park. Table 4.1 identifies each property and their orientation on the east or west side of Rouse, their eligibility for protection, and the proposed impact on each resource. Figure 4-1 illustrates the location of each protected property.

Table 4.1
Properties Protected by Section 4(f)

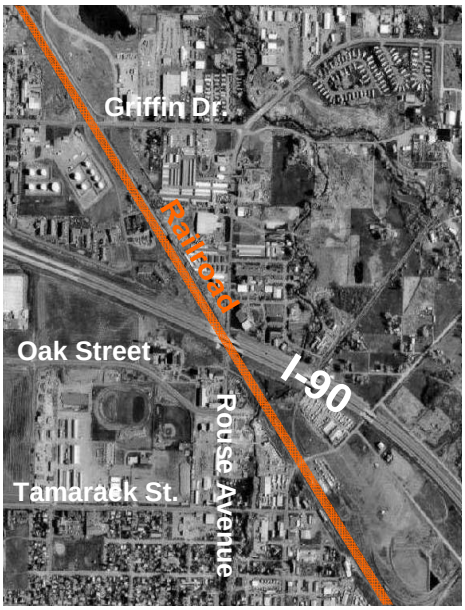
Property (and orientation to Rouse)	Site No.	Type of Structure	Eligibility	Effect
321 E. Main (west)	24GA1739	Bozeman Hotel	Contributing	No Effect
102 N. Rouse (east)	24GA1688	Hawthorne School	Individually	No Adverse Effect
Creekside Park (west)	- na -	Park	Park	No Effect
North Rouse Avenue Historic District:				
503 N. Rouse Avenue (west)	24GA1701	House	Contributing	No Adverse Effect
507 N. Rouse Avenue (west)	24GA1703	House	Contributing	No Adverse Effect
513 N. Rouse Avenue (west)	24GA1704	House	Contributing	No Adverse Effect
515 N. Rouse Avenue (west)	24GA1705	House	Contributing	No Adverse Effect
517 N. Rouse Avenue (west)	24GA1706	House	Contributing	No Adverse Effect
521 N. Rouse Avenue (west)	24GA1707	House	Contributing	No Adverse Effect
526 N. Rouse Avenue (east)	24GA1709	House	Contributing	No Adverse Effect
Railroad Main Line (intersecting)	24GA1096	Northern Pacific	Individually	No Effect

All impacts to the Bozeman Hotel and Creekside Park are completely avoided by the proposed project, and no new right-of-way would be required from the Northern Pacific rail line. Right-of-way would be required from several residential parcels contained within the North Rouse Avenue Historic District, but these impacts are not considered a Section 4(f) use since the historic designation is limited to the homes themselves and not the properties as a whole.

Impacts to the Hawthorne Elementary School property are discussed in the following section.

MDT has coordinated the proposed impacts to these historic properties with SHPO (see correspondence in Appendix A).

Figure 4-1
Properties Protected by Section 4(f)

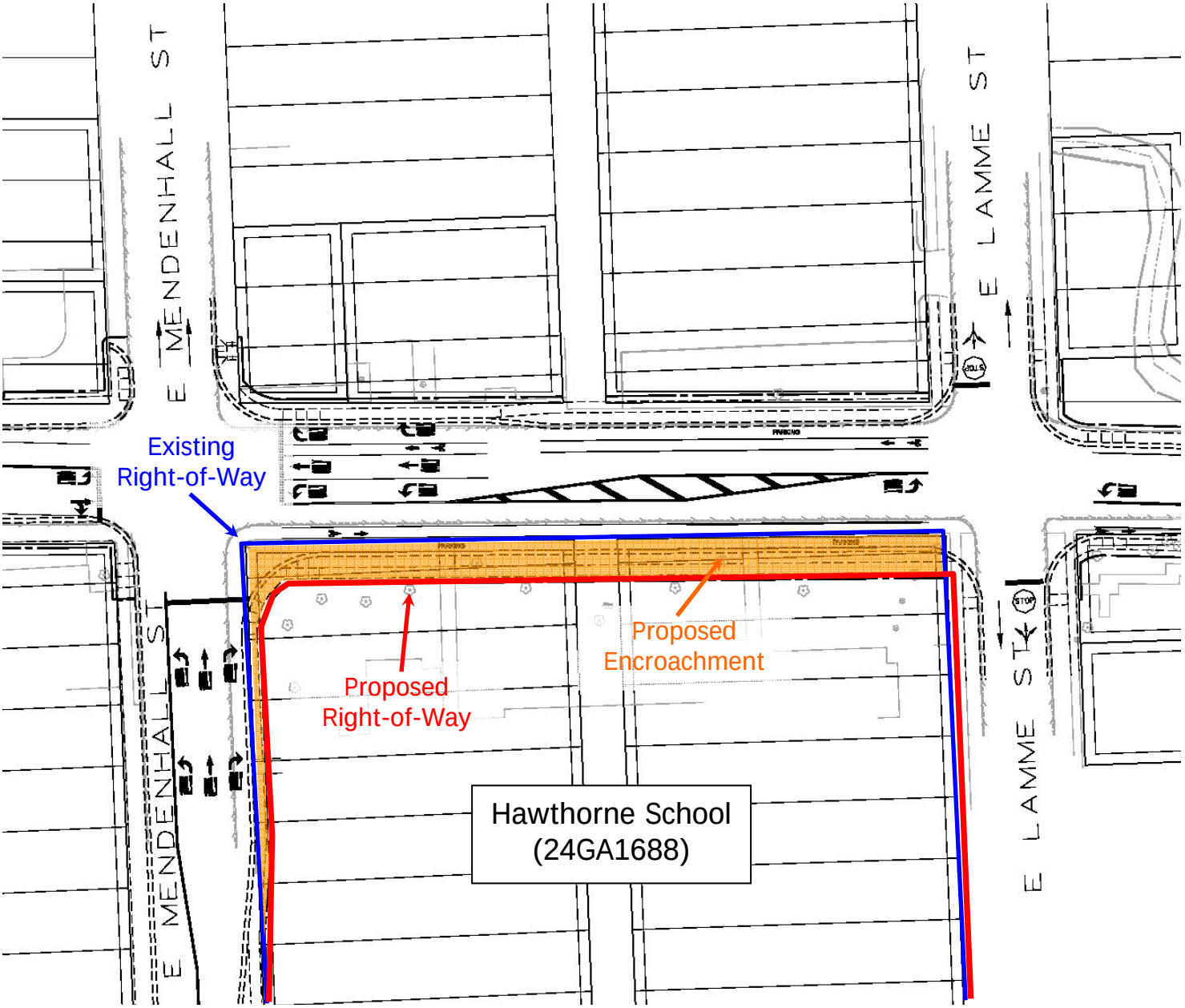


Key:

- Individually eligible historic property
- Element contributing to historic district
- Park

Hawthorne School

Impacts to the Hawthorne School property are limited to a right-of-way encroachment necessary for the installation of a landscaped boulevard which is included in this portion of the corridor at the request of the school. This encroachment will impact the front yard of the school and will not disrupt any public recreational use of the property, nor impact the historic character of the site. Proposed impacts to the Hawthorne School property are illustrated below. MDT has coordinated with the Hawthorne School regarding the encroachment and their desire to have a landscaped boulevard included in the proposed project in their portion of the corridor. Documentation of this coordination is included in Appendix A.



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5.0 LIST OF PREPARERS AND REVIEWERS

The responsibilities and qualifications of the consultant team that prepared the Rouse Avenue Environmental Assessment are listed below:

List of Preparers

Preparer/Affiliation	Role	Education and Experience
Phil Odegard, P.E. HKM Engineering	Project Management, Roadway Design	B.S., Civil Engineering. Over 25 years experience in civil engineering design including transportation, municipal, and hydraulic engineering.
Darryl L. James, AICP HKM Engineering	Environmental Process Management, NEPA/MEPA Compliance, Public Participation	M.P.A., with an Environmental Concentration; B.A., Public Affairs and Political Science. Senior consultant with over 18 years of professional experience. Expertise in transportation planning, NEPA analysis, and technical report writing.
Sarah Nicolai HKM Engineering	Document Preparation	B.A., Civil Engineering (ongoing). Over four years of legal and policy-related experience. Professional focus on planning and environmental documentation.
Tyler J. Schott HKM Engineering	Document Preparation	B.A., Civil Engineering (ongoing). One year of environmental analysis and documentation experience. Professional focus on transportation planning and environmental documentation.

Agency representatives responsible for review of the Environmental Assessment are listed below:

List of Reviewers and Decision-Makers

Preparer/Affiliation	Role	Education and Experience
Theodore G. Burch Program Development Engineer FHWA	Lead Agency	B.S. Civil Engineering, Masters of Engineering – Structures, Program Development Engineer and Team Leader for the statewide program areas of planning, environment, safety and design, right-of-way, and materials. 19 years experience in highway engineering, environmental review and program/project management.
Jeffrey A. Patten Operations Engineer FHWA	Lead Agency	B.S., Construction Management, 16 years experience in highway engineering, planning, environmental review, traffic analysis, and program/project management
Jeffrey M. Ebert, P.E. Butte District Administrator MDT	Lead Agency	B.S., Civil Engineering. Six years experience in construction project management and estimating. Seventeen years in highway planning, engineering, and program management.
Joe Olsen, P.E. Butte District Engineering Services Engineer MDT	Lead Agency	B.S. Geological Engineering. Over 20 years experience in highway planning, engineering & design; construction; and project & program management/development.

Gabe Priebe, P.E. Consultant Project Supervisor MDT	Lead Agency	B.S., Civil Engineering, B.A. Mathematics. Seven years experience in construction, highway engineering, planning level safety analysis and project management.
Tom S. Martin, P.E. Bureau Chief, Environmental Services MDT	Lead Agency	B.S. Civil Engineering - Over 14 years experience in design and management of transportation facilities.
Heidy Bruner, P.E. Engineering Section Supervisor - Environmental Services MDT	Lead Agency	B.S. Environmental Engineering, approximately 10 years environmental engineering design and management.

6.0 DISTRIBUTION LIST

Federal Agencies

U.S. Department of the Interior
Fish & Wildlife Service
Montana Field Office, 100 N. Park, Suite #320
Helena, MT 59601
Attn: Mark Wilson, Field Supervisor

U.S. Department of the Interior
Fish & Wildlife Service
2900 4th Avenue North, Room 301
Billings, 59101-1266
Attn: Lou Hanebury, Biologist

U.S. Department of the Interior
National Park Service
Office of Environmental Policy and Compliance
Washington, DC 20240

U.S. Army Corps of Engineers
215 N.17th Street
Omaha, NE 68102-4978

U.S. Environmental Protection Agency
Region VIII, Montana Office
Federal Building, 10 NW 15th Street, Suite 3200
Helena, MT 59626-0096
Attn: John F. Wardell, Director

State Agencies

Montana Department of Environmental Quality
1520 East 6th Avenue, P. O. Box 200901
Helena, MT 59620-0901
Attn: Steve Welch, Administrator
Permitting & Compliance Division

Montana State Historic Preservation Office
1410 8th Avenue
P.O. Box 201202
Helena, MT 59620-1202
Attn: Stan Wilmott, Historian

Montana Department of Natural Resources & Conservation
1625 11th Avenue
P.O. Box 201601
Helena, MT 59104-0437
Attn: Mary Sexton, Director

Montana Fish, Wildlife & Parks
1420 East Sixth Avenue
P.O. Box 200701
Helena, MT 59620-0701
Attn: M. Jeff Hagener, Director
Glenn R. Phillips, Chief of Habitat and Protection Bureau Fisheries Division

Montana Environmental Quality Council
Office of the Director
Capitol Post Office
P. O. Box 215
Helena, MT 59620

Montana Transportation Commission
902 Parkhill Drive
Billings, MT 59101
Attn: William T. Kennedy, Chairman

Montana Governor's Office
Executive Office
Room 204, State Capitol
Helena, MT 59620-0801
Attn: Brian Schweitzer, Governor

Montana State Library
1515 East 6th Avenue, P.O. Box 201800
Helena, MT 59620-1800
Attn: Roberta Gebhardt
Collections Management Librarian

Local Agencies

City of Bozeman
411 East Main
P.O. Box 1230
Bozeman, MT 59771-1230
Attn: Chris Kukulski, City Manager

Gallatin County
311 West Main, Room 208
Bozeman, MT 59715
Attn: Greg Sullivan, Planning Director

Bozeman City Library
220 East Lamme
Bozeman, MT 59715

7.0 COMMENTS AND COORDINATION

7.1 Public Agencies

MDT contacted the following agencies and parties in preparing this EA.

Agencies with Jurisdiction and/or Permitting Authority

Advisory Council on Historic Preservation (ACHP, reviewed "Determinations of Effect")
City of Bozeman (FEMA Floodplain Development Permit, Weed Control District)
Department of the Interior - U.S. Fish & Wildlife Service (USFWS)
Montana Department of Environmental Quality (MDEQ, MPDES authorization)
State Historic Preservation Office (SHPO, reviewed/concurred with "Determination of Effect")
U.S. Environmental Protection Agency

Other Agencies, Groups, or Persons Contacted

Montana Department of Natural Resources & Conservation (DNRC)
U.S. Department of Agriculture - Natural Resources Conservation Service (NRCS)

7.2 Cooperating Agencies

In accordance with the provisions of 23 CFR 771.111(d), MDT requested that the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (CoE), Montana Department of Environmental Quality (DEQ), Montana Fish, Wildlife & Parks (MFWP), Gallatin County Roads and Bridge Department, and the City of Bozeman participate in the development of this project as Cooperating Agencies. No formal responses were received from any agency regarding these requests.

7.3 Public Involvement

Public Meetings

The first public scoping meeting for this proposed project was held in Bozeman on December 7, 2005. The meeting took place from 6:00 pm to 8:00 pm in Bozeman at the Bozeman City Hall. Approximately 12 people attended the meeting. The meeting format included an open house, formal presentation, and a question/comment period. The purpose of the meeting was to introduce the project and gather public opinion regarding issues and concerns related to transportation in the Rouse Avenue corridor.

A second public information meeting was held at the Bozeman Senior Center on January 25, 2006. The meeting took place from 7:30 pm to 9:00 pm, and was attended by approximately 27 people. The meeting format included an open house, formal presentation, and a question/comment period. The purpose of the meeting was to update the public on the progress of the project since the first meeting, explain the NEPA/MEPA process, and to continue to solicit public opinion regarding issues and concerns related to the Rouse Avenue corridor. A substantial portion of the meeting was devoted to soliciting public comments about the project.

A separate meeting was held on January 25, 2006, prior to the public meeting, from 6:00 p.m. to 7:00 p.m. for the Northeast Neighborhood Association (NENA) group, a coalition of local residents. The purpose of this meeting was to discuss the proposed project with the residents who would be most affected by the project and their opinion regarding issues and concerns related to the Rouse Avenue corridor.

A third public information meeting was held May 31, 2005. The meeting took place from 7:30 pm to 9:00 pm, and was attended by approximately 47 people. The meeting was held at Hawthorne Elementary School. The purpose of the meeting was to present possible alternatives for the proposed widening of Rouse Avenue and to seek input from the public. Members of the public attending the meeting were asked to rank the importance of potential design choices in the corridor. These included not piping Bozeman Creek, bike lanes, and parking. Project design alternatives were presented at this meeting.

Press Releases and Mailings

Press releases and display ads were issued for public meetings. Advertisements were submitted to the *Bozeman Daily Chronicle* and set to run on Sunday Nov. 27, Wednesday Nov. 30, and Sunday Dec. 4, but due to unexplained reasons did not run. An additional Scoping Meeting was then scheduled and held on January 25, 2006. Ads were run on Sunday, January 15, 2006 and Friday, January 20, 2006 for the January 25, 2006 meeting. These display ads ran in the *Bozeman Daily Chronicle*.

A display ad for the May 31, 2005 meeting ran in the *Bozeman Daily Chronicle* and was coordinated by the MDT Public Information Office. A press release was also sent to other local radio stations including: KBOZ, KBZM "The Eagle," KISN FM, KMMS, KZMY, as well as local television stations including: KTVM, KUSM, KGLT.

Tracy Oulman, the Neighborhood Coordinator for the City of Bozeman, was responsible for inviting people to the NENA meetings held on January 25, 2006 and October 24, 2006. In addition, a newsletter was developed and handed out at an April, 2006 NENA meeting.

HKM Engineering Inc. invited representatives from pedestrian and bicycle groups to the June 20, 2006 meeting via a combination of email and phone calls.

Website

A project website was established for this proposed project. This site includes a description of the proposed project, a proposed schedule, project newsletters, and opportunities to provide comment. The site also has links to MDT and HKM Engineering.

Organizational Meetings

At the request of local pedestrian and bicycle groups, a meeting was held to discuss pedestrian and bicycle issues in the corridor on June 20, 2006. Representatives of these local groups were

encouraged to share their ideas about how to best incorporate pedestrian and bicycle facilities into the corridor design.

A representative of the design team attended a Northeast Renewal District Meeting on October 10, 2006. A representative of the team preparing the EA attended a NENA meeting on October 24, 2006. At each meeting, a project update was given and there was an opportunity for members of the public to ask questions.

Additional Public Involvement Events

A Public Hearing will be conducted to obtain comments on this Environmental Assessment while the document is out for public review and comment. Notice of availability of this document as well as the notice for the Public Hearing has been placed in the *Bozeman Daily Chronicle*. Public Hearing notices have also been sent to everyone on the project mailing list, and the notice has been posted on the project website at http://www.hkminc.com/Rouse/Default.asp

Comments on the EA can also be provided via the internet by logging onto the MDT web page at www.mdt.mt.gov. There is a "Public Involvement" pull-down menu, and a tab for "Review/Comment on Environmental Documents." The Rouse Avenue project will be listed in the "Open for Comment" section of this page for the duration of the public comment period.

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APPENDIX A: SECTION 4(F) COORDINATION AND SHPO CONCURRENCE

This appendix includes copies of SHPO coordination letters, concurrence on eligibility and determinations of effect, and coordination letters with the Hawthorne Elementary School regarding the impacts to the protected Section 4(f) property.

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U.S. Department of Transportation
Federal Highway Administration

Montana Division

585 Shepard Way
Helena, MT 59601

April 22, 2008

MASTER FILE COPY

In Reply Refer To:
HDA-MT

Mark Baumler
State Historic Preservation Office
PO Box 201202
Helena, MT 59620-1202

RECEIVED
APR 25 2008
By: SHPO

- Josef
- FHWA
- ROUSE AVE - BOZEMAN 4F DE MINIMIS

Subject: ***De minimis Finding***
Project Name: Rouse Avenue EA
Project Number: STPP 86-1(27)0
Control Number: 4805

Dear Mr. Baumler:

By way of this letter, the Federal Highway Administration (FHWA) is requesting written concurrence from the Montana State Historic Preservation Office (SHPO) that the determinations of effect as listed below are still applicable:

- Northern Pacific Railroad 24GA1096 No Effect
- Hawthorne School 24GA1688 No Adverse Effect

See attached previous concurrence and de minimis exhibits.

In addition to Section 106 of the National Historic Preservation Act (NHPA), FHWA must comply with the provisions of Section 4(f) of the 1966 Department of Transportation Act. Historically, Section 4(f) has required that prior to approval of any federally-funded highway project resulting in the "use" of listed or eligible historic properties under the NHPA; the FHWA must perform an avoidance analysis to determine whether there is a "feasible and prudent" alternative that would avoid the Section 4(f) resource.

In August of 2005, Section 138 of title 23, USC was amended under the Safe, Accountable, Flexible, and Efficient Transportation Act: A Legacy for Users (SAFETEA-LU). Section 6009 of SAFETEA-LU provided new legislative authority to address programs and projects with minor or *'de minimis'* impacts on a Section 4(f) resource.

More specifically, Section 6009(b) (2) of SAFETEA-LU states:

> (2) HISTORIC SITES.--With respect to historic sites, the Secretary may make a finding of *de minimis impact* only if--

MOVING THE AMERICAN ECONOMY

> (A) the Secretary has determined, in accordance with the consultation process required under section 106 of the National Historic Preservation Act (16 U.S.C. 470f), that--
> (i) the transportation program or project will have no adverse effect on the historic site; or
> (ii) there will be no historic properties affected by the transportation program or project;
> (B) the finding of the Secretary has received written concurrence from the applicable State historic preservation officer or tribal historic preservation officer (and from the Advisory Council on Historic Preservation if the Council is participating in the consultation process); and
> (C) the finding of the Secretary has been developed in consultation with parties consulting as part of the process referred to in subparagraph (A).

This new provision of Section 4(f) is the basis of this letter, and of the FHWA's determination of *de minimis* impacts.

De Minimis Determination

The findings of "no effect and no adverse effect" reflect a conclusion that the uses identified in the attached exhibits will not "alter, directly or indirectly, any of the characteristics of [the] historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

If you concur in the "no effect and no adverse effect" determination, FHWA intends to make a finding that impacts to historic resources that would result from implementation of the subject project would be *de minimis* for purposes of Section 4(f), as recently amended by Congress.

Request for Concurrence

The FHWA requests the written concurrence of the Montana SHPO that the above-described finding of "no effect and no adverse effect" on historic resources from the subject project are still applicable. This written concurrence will be evidence that the concurrence and consultation requirements of Section 6009 of SAFETEA-LU, as they will be codified at 23 U.S.C. § 138(b) (2) (B) & (C), and 49 U.S.C. § 303 (d) (2) (B) and (C) are satisfied. Concurrence can be provided either by signing and dating this letter or by separate letter from the Montana SHPO to the Federal Highway Administration, 585 Shepard Way, Helena, MT 59601.

Sincerely,

Kevin L. McLaury, P.E.
Division Administrator

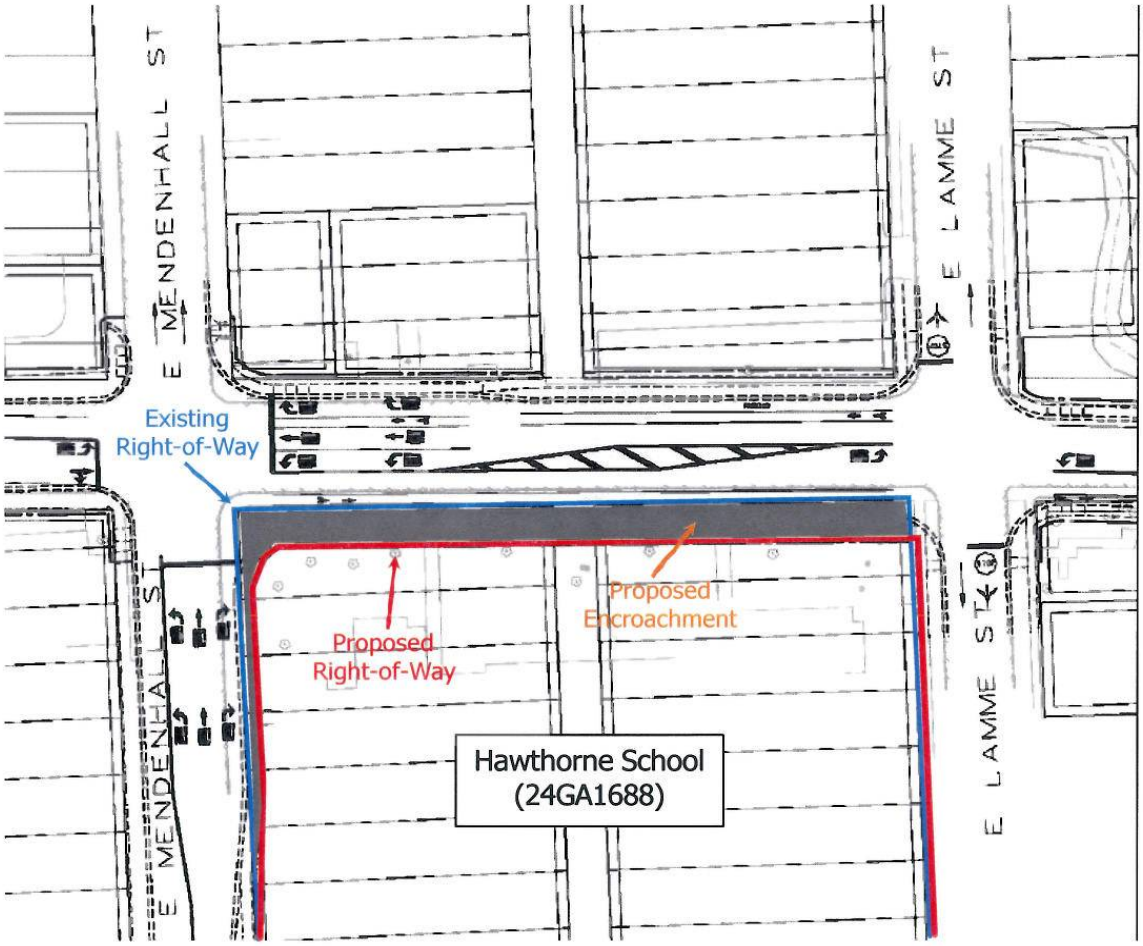
Attachments

cc: Jeff Patten, FHWA, Operations Engineer
Carl James, FHWA, Transportation Specialist

File: STPP 86-1(27)0 jp/lw

CONCUR
MONTANA SHPO:

DATE 6 May 08 SIGNED


E MENDENHALL ST
E LAMME ST
Existing
Right-of-Way
Proposed
Encroachment
Proposed
Right-of-Way
Hawthorne School
(24GA1688)
E MENDENHALL ST
E LAMME ST

MDT serving you with pride

Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Jim Lynch, Director
Brian Schweitzer, Governor

CONCUR
MONTANA SHPO
DATE 4 Jun 07 SIGNED

RECEIVED
JUN 06 2007
ENVIRONMENTAL

May 14, 2007

Mark Baumler, Ph.D.
State Historic Preservation Office
1410 8th Avenue
P O Box 201202
Helena, MT 59620-1202

Subject: STPP 86-1(27)0
Rouse Avenue – Bozeman
Control No. 4805

Dear Mark:

On November 30, 2006, your office concurred with our Determination of Effect for the above project. According to the Determination, there would be an Adverse Effect to the MDT's Bozeman Area Office (24GA1729) and an Adverse Effect to three houses located on Rouse: 24GA1713, 24GA1714, and 24GA1715. Site 24GA1729 was determined ineligible for the NRHP on March 30, 2007. The residences were originally evaluated as to whether they would contribute or not contribute to a potential historic district (24GA1722). All three residences contributed to the district. While discussing possible mitigation measures for the three residences with Bozeman Historic Preservation Office Allyson Bristor and after visiting the project area myself, we both questioned whether the three buildings contributed to a district and, importantly, if there was an historic district at all. To resolve that issue, the MDT contracted with Joan Brownell to take another look at Rouse Avenue and provide us with her judgment in regards to the historic properties along the street.

Based on Brownell's findings (enclosed) we are recommending that the historic district boundaries be reduced to include only the 500 block of North Rouse. Ms. Brownell also recommends that four contributing properties on the 600 block be downgraded to non-contributing for the reasons specified in the enclosed report. Those four properties are 24GA1702, 24GA1708, 24GA1712, and 24GA1713. The latter is 540 North Rouse and is one of the properties for which the project would cause an Adverse Effect. Ms. Brownell also recommends that three properties be removed from the district altogether and be reclassified as ineligible for the National Register. They are: 24GA1715, 24GA1716, and 24GA1717). Site 24GA1715 is also one of the properties for which there would be an Adverse Effect caused by the proposed project. The remaining eight properties, 24GA1701, 24GA1703-24GA1707, 24GA1709 and 24GA1714 would continue to contribute to the proposed district. Site 24GA1714 is also one of the historic properties to which there would be an Adverse Effect. We agree with Ms. Brownell's findings and request your concurrence.

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Fax: (406) 444-7245

Engineering Division
TTY: (800) 335-7592
Web Page: www.mdt.mt.gov

If you have any questions, please contact me at 444-6258.

Jon Axline, Historian
Environmental Services

Enclosure

cc: Jeff Ebert, P.E., Butte District Administrator
Tom Martin, P.E., Consultant Design
Bonnie Steg, Resources Section
Allyson Bristor, Bozeman HPO w/attachment

2007121802

Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Jim Lynch, Director
Brian Schweitzer, Governor

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December 18, 2007

Mark Baumler, Ph.D.
State Historic Preservation Office
1410 8th Avenue
P O Box 201202
Helena, MT 59620-1202

CONCUR
MONTANA SHPO
DATE 7 Jan 08 SIGNED SHPO

• Josef
• MDT
• Rouse Ave - Bozeman
24GA 1714
RE-EVALUATION

Subject: STPP 86-1(27)0
Rouse Avenue – Bozeman
Control No. 4805

Dear Mark:

A few months ago, I re-inventoried the Henderson Place (24GA1714) at 544 North Rouse in Bozeman. The residence was determined to be a contributing component to the potential North Rouse Avenue Historic District (24GA1722) in Bozeman in May 2006. The re-inventory was done in preparation of a document for submittal to the National Park Service's Historic American Building Survey (HABS) and because none of the prior inventories had involved features on the rear façade of the residence or in its backyard. Based on that re-inventory, a review of other residences in proximity to it, and Joan Brownell's May 2007 review of the potential district, we have changed our original determination concerning the National Register status of the property. We now believe that it does not contribute to the potential North Rouse Avenue Historic District and it is not individually ineligible for the National Register of Historic Places.

In Joan Brownell's review of 24GA1714 and the North Rouse neighborhood in May 2007, she noted that the hood over the front door had recently been removed from the façade and an approximately 2-foot band of the existing Masonite-type siding had also been removed from the façade and elevations of the house. The removal of the siding revealed the original novelty siding underneath (minus the corner boards). Since then, the rest of the siding has not been removed and the hood does not appear to be located on the property. It is unclear after conversations with the property owner if any more work will be done to the house. The rear façade of the house has been altered with the addition of wood board-and-batten siding on the rear addition and modifications to the rear cellar entry. The 1943 Sanborn map also indicates that the addition was originally located on the right of the rear of the façade and has sometime since then been moved to the left façade where it currently is located. A perusal of the Bozeman city directories has also failed to reveal any additional information about the house, including the year it was constructed. In all, the residence retains only marginal integrity and does not possess enough integrity to qualify for the National Register on its own. Indeed, after reviewing the contributing properties on North Rouse, 24GA1714 retains noticeably less integrity than those properties and would only marginally contribute to an historic district.

544 North Rouse is located at the southeast corner of North Rouse and Peach Street. There are non-contributing/ineligible residences located at two other quadrants of the intersection

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(northwest and southwest). A modern convenience store is located directly across the street from the residence on the northeast corner of the intersection. A modern apartment complex is located behind the house to the east and the house immediately adjacent to 544 North Rouse (24GA1714) is ineligible for the National Register and would not contribute to the potential historic district. The 500 block of North Rouse is approximately 1,500-feet in length (the average city block in Bozeman is 600-feet in length) and contains seventeen residences, seven (24GA1701, 24GA1703-24GA1707) of which would contribute to the potential district (none are individually eligible for the NRHP). Those residences are concentrated on the west side of the road on the south end of the block with one located directly across from 24GA1707 on the east side of North Rouse. 544 North Rouse is located on east side at the north end of the block. It is surrounded by properties that do no contribute to the potential historic district and are individually ineligible for the Register. There is no physical or visual connection between the residence and those properties that would contribute to an historic district. If the potential historic district boundaries were extended to include the property, there would be eight contributing properties and nine non-contributing properties in the potential North Rouse Street Historic District. The eighth property, 544 North Rouse, would be isolated at the end of the block, separated from the other properties by seven non-contributing residences.

It is our contention that the house cannot contribute to the historic district as it would be discontiguous to the potential district. National Register Bulletin #16A in "Guidelines for Selecting Boundaries" (pp. 56-57) states that persons should "Select boundaries to encompass the single area of land containing the significant concentration of buildings, sites, structures, or objects making up the district. The district's significance and historic integrity should help to determine the boundaries." Further, if there have been visual changes "in the character of the area due to different architectural styles, types or periods, or to a decline in the *concentration of contributing resources*" then the property would not contribute to the district. Site 24GA1714 is not contiguous to the potential district's boundaries. The seven properties that would contribute to the historic district are located contiguous to each other and meet the guidelines for a significant physical and visual concentration of buildings that would contribute to an historic district. There is no visual continuity between the potential district boundaries and 544 North Rouse. There is a significant gap consisting of non-contributing resources between those that contribute and 544 North Rouse. National Register Bulleting #15 (page 6) states that it is "not appropriate to use the discontiguous district format to include an isolated resource . . . which [was] once connected to the district.

If the potential historic district boundaries were drawn around the south end of the 500 block of North Rouse, it would include seven contributing properties and two non-contributing buildings. The district would be a recognizable entity and clearly retain integrity. The guidelines established by the Keeper of the National Register of Historic Places in Bulletin #15 would then be met and the presence of a strong, easily recognized historic district established.

Based on my review of the project area, the adjacent streets, and the National Register guidelines, 544 North Rouse is not contiguous to the potential historic district and could not, therefore, contribute to the potential North Rouse Avenue Historic District. Inclusion of the residence in the potential historic district would result in 544 North Rouse being isolated from the row of contributing building at the end of the block, surrounded by non-contributing components. The ratio between contributing and non-contributing components be balanced in favor of the non-contributing buildings with more than half of the buildings not contributing the

district. The residence at 544 North Rouse moreover, does not retain enough integrity or historic significance to qualify as an individually eligible historic property. We have concluded, therefore, that 544 North Rouse (24GA1714) does not contribute to the proposed North Rouse Avenue Historic District (24GA1722) and is not individually eligible for the National Register. We request your concurrence.

If you have any questions, please contact me at 444-6258.

Jon Axline

Jon Axline, Historian
Environmental Services

Attachment

cc: Jeff Ebert, P.E., Butte District Administrator
Tim Conway, P.E., Consultant Design
Bonnie Steg, Resources Section
Allyson Bristor, Bozeman Historic Preservation Office

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Montana Department of Transportation
2701 Prospect Avenue
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Helena MT 59620-1001

Jim Lynch, Director
Brian Schweitzer, Governor

MASTER COPY, Joseph, MDT, Rouse Ave – Bozeman Effect FINDING

November 6, 2006

CONCUR
MONTANA SHPO
DATE 30 Nov 06 SIGNED
BY SHPO

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DEC 06 2006
ENVIRONMENTAL

Mark Baumler, Ph.D.
State Historic Preservation Office
1410 8th Avenue
P O Box 201202
Helena, MT 59620-1202

Subject: STPP 86-1(27)0
Rouse Avenue – Bozeman
Control No. 4805

Dear Mark:

Enclosed is the Determination of Effect for the above project in Gallatin County. We have determined that the proposed project would have **No Effect** to the NRHP-eligible Slaughter Rental (24GA1741), Northern Pacific Railroad Main Line (24GA1069), and the National Register-listed Bozeman Hotel (24GA1739). There would be **No Adverse Effect** to the Hawthorne School (24GA1688), 24GA1701-24GA1709, 24GA1712, 24GA1716, and 24GA1717. There would be an **Adverse Effect** to the Montana Highway Commission's Bozeman Area Office (24GA1729) and 24GA1713, 24GA1714, and 24GA1715 for the reasons specified in the document. Possible mitigation measures are also outlined in the Determination of Effect. We are currently working with the Bozeman Historic Preservation Officer to develop a draft Memorandum of Agreement. When that has been completed we will forward you a draft copy for your comments. We request your concurrence.

If you have any questions, please contact me at 444-6258.

Jon Axline

Jon Axline, Historian
Environmental Services

Enclosure

cc: Jeff Ebert, P.E., Butte District Administrator
Tom Martin, P.E., Consultant Design
Bonnie Steg, Resources Section

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March 21, 2007

- Josef
- MDT
- Bozeman

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State Historic Preservation Office
1410 8th Avenue
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Helena, MT 59620-1202

SHPO

CONCUR
MONTANA SHPO
DATE 30 Mar 07 SIGNED

Subject: STPP 86-1(27)0
Rouse Avenue - Bozeman
Control No. 4805

Dear Mark:

Enclosed is the amended site form for the Montana Highway Department's Bozeman Office & Shop Complex (24GA1729). On May 2006, you agreed with our original determination that the site is eligible for the National Register of Historic Places. I visited the site last week in Bozeman and researched the property's correspondence file. Based on what I observed and learned from the file, I do not believe that original determination is valid. There are only five historic age buildings on the property and all have been significantly altered since their construction from 1936 to the late 1950s. With the exception of a storage shed (F-7), none exhibit their historic appearance. Also, the site yard has changed significantly since the early 1960s with the removal of several historic-age buildings and addition of other buildings and structures since then. Consequently, we believe the Montana Highway Department's Bozeman Office & Shop Complex is ineligible for the National Register for the reasons specified in the amended site form. We request your concurrence.

If you have any questions, please contact me at 444-6258.

Jon Axline

Jon Axline, Historian
Environmental Services

Enclosures

cc: Jeff Ebert, P.E., Butte District Administrator
Tom Martin, P.E., Consultant Design
Bonnie Steg, Resources Section

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Superintendent

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Bozeman Public Schools
404 West Main, P.O. Box 520
Bozeman, Montana 59771-0520

August 2, 2006

Phil Odegard, P.E.
HKM Engineering
7 West 6th Avenue, Suite 3W
P.O. Box 1009
Helena, MT 59624

RE: Proposed Reconstruction of Rouse Avenue
Bozeman, MT
Bozeman School District #7 Comments on Proposed Alternatives

Dear Mr. Odegard:

Thank you for taking the time to meet with District staff in July and review the various alternatives being proposed for the Rouse Avenue reconstruction and their impacts on the Hawthorne Elementary School campus.

Like other stakeholders, we have multiple interests, with student safety and service being most important. With that in mind, our priorities favor a parking lane along the west side of the Hawthorne campus (east side of Rouse), and a sidewalk with separating boulevard strip between the walk and street curb. We would support the inclusion of a bike lane in the Rouse Avenue profile if the bike lane is continuous throughout the project. If the bike lane is discontinuous, we don't feel this amenity is worth the loss of additional street separation for Hawthorne. Generally, these elements are reflected in the options titled "Alternative 2" (Sheet 2) and "Alternative 1" (Sheet 5) that you reviewed with District staff in the meeting on July 5, 2006, with the bike lane contingency as noted above. Alternative 1 (Sheet 5), is more desirable in that the property impact on the Hawthorne campus is less, but we understand this option has added impacts further north on Rouse Avenue that may be difficult to resolve.

Regardless of the final street profile selected, it is our understanding and expectation that the various related impacts to the Hawthorne campus will be

addressed and resolved. These would include relocation/reconstruction of the Hawthorne sign, relocation and/or replacement of various trees, grade adjustments relative to sidewalks and landscape elements, and compensation for property loss.

Thank you for the opportunity to comment, and the District looks forward to continued involvement with this project as it progresses. *If you have any questions about our position please contact or reply to Ed Sondeno at 522-6009.*

Sincerely,

Michael Redburn, Superintendent

cc Board Members
Steve Johnson
Robin Miller
Ed Sondeno

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This document may be obtained electronically from the Montana Department of Transportation website at:
www.mdt.mt.gov/pubinvolve/eis_ea.shtml
Public comments on this Environmental Assessment may also be submitted at this website address.