# WHITEFISH

## URBAN CORRIDOR STUDY OF U.S. 93

**Public Draft**

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City of Whitefish

MONTANA MDT DEPARTMENT OF TRANSPORTATION

WHITEFISH
URBAN CORRIDOR STUDY OF U.S. 93

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WHITEFISH
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# TABLE OF CONTENTS

Page No.


**EXECUTIVE SUMMARY** ..... ES-1

**INTRODUCTION** ..... IN-1

**1.0 EXISTING TRANSPORTATION CONDITIONS**

**1.1 US 93 and Its Adjoining Road and Street Network** ..... 1-1
**1.2 Functional Classification** ..... 1-3
**1.3 Existing Roadway Characteristics on US 93 and Baker Avenue** ..... 1-4
1.3.1 Lane Configurations and Typical Sections on US 93 ..... 1-4
1.3.2 Lane Configurations and Typical Sections on Baker Avenue ..... 1-6
1.3.3 Posted Speeds ..... 1-9
1.3.4 Intersections/Roadway Geometry ..... 1-10
1.3.5 Traffic Controls and Turning Lanes ..... 1-10
1.3.6 Right-of-Way ..... 1-11
1.3.7 Bridges ..... 1-11
1.3.8 Corridor Street Lighting ..... 1-11
1.3.9 Corridor Utilities ..... 1-11
1.3.10 Approaches and Access Control ..... 1-12
**1.4 Current Traffic Operations** ..... 1-13
1.4.1 Current Traffic Volumes on US 93 ..... 1-13
1.4.2 Hourly Variations in Traffic on the US 93 Corridor ..... 1-16
1.4.3 Seasonal Variations in Traffic ..... 1-17
1.4.4 Vehicle Classifications/Trucks ..... 1-17
1.4.5 Existing Intersection Levels of Service ..... 1-19
1.4.6 Corridor Capacity ..... 1-22
**1.5 Safety Analysis** ..... 1-23
1.5.1 Recent Crash Data for the Corridor ..... 1-23
1.5.2 Severity Index and Crash Rates ..... 1-25
**1.6 Pedestrian and Bicycle Facilities in the Corridor** ..... 1-26
1.6.1 Sidewalks ..... 1-26
1.6.2 Crosswalks ..... 1-26
1.6.3 Designated Pedestrian and Bicyclist Trails in the Corridor ..... 1-27
1.6.4 Proposed Pedestrian and Trail Amenities on US 93 ..... 1-28
1.6.5 Pedestrian and Bicyclist Involvement in Corridor Crashes ..... 1-29
**1.7 Other Transportation Modes** ..... 1-29
1.7.1 Rail Service ..... 1-29
1.7.2 Air Service ..... 1-30
1.7.3 Transit Services ..... 1-30
**1.8 Summary of Existing Transportation Conditions** ..... 1-31

## 2.0 COMMUNITY STRUCTURE AND SETTING

**2.1 Current and Planned Land Uses in the Corridor** ..... 2-1
2.1.1 Existing Corridor Land Uses ..... 2-1
2.1.2 Land Use Plans ..... 2-2
2.1.3 Whitefish Downtown Business District Master Plan ..... 2-3
2.1.4 Existing Land Use Regulations ..... 2-5
2.1.5 Future Land Use and Community Development ..... 2-6
**2.2 Community Socio-Economic Characteristics** ..... 2-8
2.2.1 Demographics and Socio-Economic Conditions ..... 2-8
2.2.2 Personal Travel and Commuting Characteristics ..... 2-12
2.2.3 Current Economic Conditions ..... 2-13
2.2.4 Population Projections ..... 2-15
2.2.5 Future Household and Employment Projections ..... 2-16
**2.3 Environmental Setting** ..... 2-17
2.3.1 Geology and Soils ..... 2-18
2.3.2 Important Farmland ..... 2-18
2.3.3 Water Resources ..... 2-18
2.3.4 Floodplains ..... 2-19
2.3.5 Wetlands ..... 2-19
2.3.6 Biological Resources ..... 2-19
2.3.7 Threatened and Endangered Species ..... 2-20
2.3.8 Air Quality ..... 2-20
2.3.9 Noise ..... 2-21
2.3.10 Hazardous Materials ..... 2-22
2.3.11 Historical and Archaeological Sites ..... 2-23
2.3.12 Section 4(f) Properties ..... 2-23
2.3.13 Section 6(f) Properties ..... 2-24
2.3.14 Utilities ..... 2-24
2.3.15 Whitefish Critical Areas ..... 2-24
2.3.16 Summary of Environmental and Community Resources ..... 2-26

## 3.0 FUTURE TRAFFIC CONDITIONS

**3.1 Future Travel Demand Forecasting in the Whitefish Area** ..... 3-1
3.1.1 Future Street Network ..... 3-1
3.1.2 Traffic Model Development ..... 3-2
3.1.3 Traffic Simulation and Analysis ..... 3-3
**3.2 Projected Traffic Conditions (2030)** ..... 3-3
3.2.1 Future Traffic Volumes and Capacity Considerations ..... 3-3
3.2.2 Future Changes in Level of Service at Corridor Intersections ..... 3-7
**3.3 Anticipated Future Operational Deficiencies** ..... 3-9

## 4.0 CORRIDOR ISSUES, VISION AND GOALS

**4.1 Identification of Corridor Issues** ..... 4-1
**4.2 Corridor Needs** ..... 4-3
4.2.1 Address Traffic Congestion and Capacity Concerns ..... 4-3
4.2.2 Address Geometric or Design Concerns ..... 4-4

4.2.3 Enhance Traffic Safety ....4-4
4.2.4 Improve Traffic Flows for Trucks ....4-5
4.2.5 Improve the Physical Condition of US 93 through Whitefish....4-5
4.2.6 Develop Fundable and Implementable Improvements ....4-6
4.2.7 Avoid or Minimize Adverse Environmental Effects ....4-7
4.2.8 Consider Local Plans....4-8
4.3.9 Enhance Pedestrian and Bicyclist Facilities Along US 93 ....4-8
4.3.10 Consider Transit and Intermodal Transportation ....4-9
**4.3 Corridor "Needs" Versus FEIS "Purpose and Need"** ....4-9
**4.4 Corridor Vision** ....4-10
4.4.1 Goals and Objectives to Support the Corridor Vision....4-11

**5.0 IMPROVEMENT OPTIONS AND STRATEGIES CONSIDERED FOR THE CORRIDOR**
**5.1 Purpose for Undertaking Improvements**....5-1
**5.2 Identification of Design and Improvement Options**....5-2
5.2.1 Alternatives from the US Highway 93 Somers to Whitefish FEIS....5-2
5.2.2 FEIS/ROD Preferred Alternative ....5-6
5.2.3 FEIS Alternatives and Strategies Not Warranting Consideration for the Corridor....5-7
5.2.4 FEIS/ROD Alternatives and Strategies to be Considered ....5-8
5.2.5 Design Configurations Proposed After the FEIS/ROD ....5-9
5.2.6 Consideration of Additional New Design Configurations....5-11
5.2.7 Off-System Improvements with Potential Benefits to the Corridor ....5-12
5.2.8 Intelligent Transportation Systems (ITS) ....5-14
5.2.9 Options and Strategies to be Evaluated for the Corridor ....5-15

**6.0 EVALUATION OF DESIGN OPTIONS FOR THE CORRIDOR**
**6.1 Overview of Screening Process**....6-1
**6.2 Pre-Screening of Corridor Design Options and Strategies** ....6-2
6.2.1 Pre-Screening for Fatal Flaws ....6-2
6.2.2 Options and Strategies Eliminated through Pre-Screening....6-3
6.2.3 Corridor Design Options and Strategies Advanced....6-6
**6.3 Screening Process for Design Options** ....6-10
6.3.1 First-Level Screening....6-10
6.3.2 Second-Level Screening....6-10
6.3.3 Screening Criteria ....6-10
**6.4. Initial Operational Reviews of Corridor Design Options**....6-11
6.4.1 Methodology ....6-11
6.4.2 Results of Initial Operational Reviews ....6-13
**6.5. First-Level Screening Assessments for Design Options**....6-15
6.5.1 Alternative A (4-Lane) Configuration ....6-16
6.5.2 Alternative C (Couplet 1) Configuration ....6-17
6.5.3 Alternative C (Couplet 2) Configuration ....6-18
6.5.4 FEIS/Record of Decision Preferred-Alternative C (Couplet 3) Configuration....6-19
6.5.5 Alternative C (Couplet 4) Configuration ....6-20

6.5.6 Alternative C (Offset) Configuration ..... 6-21
6.5.7 Modified Record of Decision Configuration ..... 6-22
6.5.8 Contra-Flow Configuration ..... 6-23
6.5.9 Truck Route Configuration ..... 6-24
6.5.10 Downtown Business District Master Plan Configuration ..... 6-25
**6.6 Recommendations Based on First-Level Screening** ..... 6-26
6.6.1 Options Not Advanced to Second-Level Screening ..... 6-26
6.6.2 Options Advanced to Second-Level Screening ..... 6-26
6.6.3 Modification to Alternative C (Offset) Configuration ..... 6-27

**7.0 TRADEOFFS BETWEEN CONFIGURATIONS OF INTEREST FOR THE CORRIDOR**
**7.1 Capacity and Traffic Operations** ..... 7-1
7.1.1 Operation and Performance of Signalized Intersections ..... 7-2
7.1.1.1 Contra-Flow Configuration ..... 7-2
7.1.1.2 Modified Alternative C (Offset) Configuration ..... 7-3
7.1.2 Operation and Performance of Unsignalized Intersections ..... 7-4
7.1.2.1 Contra-Flow Configuration ..... 7-4
7.1.2.2 Modified Alternative C (Offset) Configuration ..... 7-5
7.1.3 Overall Performance of the Configurations ..... 7-6
7.1.3.1 Contra-Flow Configuration ..... 7-6
7.1.3.2 Modified Alternative C (Offset) Configuration ..... 7-7
7.1.4 Accommodation of Truck Traffic ..... 7-10
7.1.4.1 Contra-Flow Configuration ..... 7-10
7.1.4.2 Modified Alternative C (Offset) Configuration ..... 7-10
7.1.5 Tradeoffs Between the Configurations ..... 7-11
**7.2 Safety Considerations** ..... 7-12
7.2.1 Contra-Flow Configuration ..... 7-12
7.2.2 Modified Alternative C (Offset) Configuration ..... 7-12
7.2.3 Tradeoffs Between the Configurations ..... 7-13
**7.3 Consistency with Geometric Design Criteria** ..... 7-14
7.3.1 Contra-Flow Configuration ..... 7-14
7.3.2 Modified Alternative C (Offset) Configuration ..... 7-14
7.3.3 Tradeoffs Between the Configurations ..... 7-14
**7.4 Potential Environmental Effects** ..... 7-14
7.4.1 Contra-Flow Configuration ..... 7-14
7.4.2 Modified Alternative C (Offset) Configuration ..... 7-16
7.4.3 Tradeoffs Between the Configurations ..... 7-17
**7.5 Feasibility and Affordability** ..... 7-19
7.5.1 Contra-Flow Configuration ..... 7-19
7.5.2 Modified Alternative C (Offset) Configuration ..... 7-20
7.5.3 Tradeoffs Between the Configurations ..... 7-21
**7.6 Compatibility with Local Plans and Ideals** ..... 7-22
7.6.1 Contra-Flow Configuration ..... 7-22
7.6.2 Modified Alternative C (Offset) Configuration ..... 7-22
7.6.3 Tradeoffs Between the Configurations ..... 7-23

## 8.0 FUTURE PROJECT CONSIDERATIONS

**8.1 Spokane Avenue Improvements** ..... 8-1
8.1.1 General Operational Recommendations ..... 8-1
8.1.2 Project Development and Design Considerations ..... 8-1
**8.2 2nd Street Improvements** ..... 8-2
8.2.1 General Operational Recommendations ..... 8-2
8.2.2 Project Development and Design Considerations ..... 8-2
**8.3 Baker Avenue Improvements** ..... 8-3
8.3.1 General Operational Recommendations ..... 8-3
8.3.2 Project Development and Design Considerations ..... 8-3
**8.4 7th Street Construction** ..... 8-4
8.4.1 General Operational Recommendations ..... 8-4
8.4.2 Project Development and Design Considerations ..... 8-4
**8.5 13th Street Improvements** ..... 8-5
8.5.1 General Operational Recommendations ..... 8-5
8.5.2 Project Development and Design Considerations ..... 8-5
**8.6 Pedestrian and Bicyclist Facilities** ..... 8-5
8.6.1 Project Development and Design Considerations ..... 8-6
**8.7 Improvement Priorities and Suggested Sequencing** ..... 8-6

## 9.0 FUNDING AND IMPLEMENTING CORRIDOR IMPROVEMENT PROJECTS

**9.1 Potential Federal and State Funding Sources** ..... 9-1
9.1.1 National Highway System (NHS) Funds ..... 9-1
9.1.2 Urban Highway System (STPU) Funds ..... 9-2
9.1.3 Community Transportation Enhancement Program (CTEP) ..... 9-3
9.1.4 On-System Bridge Replacement and Rehabilitation Program ..... 9-3
9.1.5 Montana Air & Congestion Initiative (MACI) – Discretionary Program ..... 9-4
9.1.6 Urban Pavement Preservation ..... 9-4
**9.2 Potential Local Funding Sources** ..... 9-5
9.2.1 TIGER Discretionary Grant ..... 9-5
9.2.2 State Fuel Tax Apportionment to the City of Whitefish ..... 9-5
9.2.3 City of Whitefish General Fund ..... 9-6
9.2.4 Resort Tax Funds ..... 9-6
9.2.5 Transportation Impact Fees ..... 9-7
9.2.6 Tax Increment Financing (TIF) ..... 9-7
**9.3 Regionally Significant Projects and Fiscal Constraint** ..... 9-8
**9.4 Future NEPA/MEPA Compliance** ..... 9-8
**9.5 Next Steps** ..... 9-10
9.5.1 Complete the Environmental Review Process ..... 9-10
9.5.2 Determine Long-Range Funding Sources for Corridor Improvements ..... 9-11
9.5.3 Begin Design Activities for Corridor Improvements Projects ..... 9-11

## APPENDICES

**APPENDIX A: Public and Agency Involvement During the Corridor Study**
**APPENDIX B: Transportation Planning Requirements and Their Relationship to National Environmental Policy Act (NEPA) Approvals (July 17, 2008 Letter from FHWA)**
**APPENDIX C: Screening Considerations Used for Assessments of Corridor Design Options**
**APPENDIX D: Technical Materials Relevant to the Operational Review of Corridor Design Options**
**APPENDIX E: Cost Estimates for Improvement Projects Associated with Contra-Flow and Modified Alternative C (Offset) Configurations**
**APPENDIX F: Summaries of Comments on the Public Review Draft Corridor Study**
(To be included in Final Corridor Study)

# LIST OF FIGURES

**Page No.**

Figure 1-1: Study Area Boundary ..... 1-2
Figure 1-2: Typical Section – US 93 (South of 13th Street) ..... 1-4
Figure 1-3: Typical Section – Spokane Avenue (6th Street to 2nd Street) ..... 1-5
Figure 1-4: Typical Section – 2nd Street (Spokane to Baker Avenue) ..... 1-6
Figure 1-5: Typical Section – Baker Avenue (3rd Street to Whitefish River) ..... 1-7
Figure 1-6: Typical Section – Baker Avenue (Whitefish River to 7th Street) ..... 1-8
Figure 1-7: Typical Section – Baker Avenue (7th Street to 10th Street) ..... 1-9
Figure 1-8: Typical Section – Baker Avenue (10th Street to 13th Street) ..... 1-9
Figure 1-9: Existing Traffic Volumes ..... 1-15
Figure 1-10: Hourly Variations in Traffic Volumes within the Corridor ..... 1-16
Figure 1-11: Designated Pedestrian and Bicyclist Trails in the Corridor ..... 1-28
Figure 1-12: Existing Conditions – Spokane Avenue ..... 1-33
Figure 1-13: Existing Conditions – 2nd Street ..... 1-34
Figure 1-14: Existing Conditions – Baker Avenue ..... 1-35

Figure 2-1: Existing Land Uses ..... 2-3
Figure 2-2: Proposed Land Use Concept from the Whitefish Downtown Business District Master Plan ..... 2-5
Figure 2-3: Future Land Use Map for the City of Whitefish ..... 2-7
Figure 2-4: Environmental and Community Resources ..... 2-27

Figure 3-1: Projected Traffic Volumes ..... 3-5
Figure 3-2: Intersection Level of Service ..... 3-8

Figure 5-1: Design Configurations from the FEIS/ROD ..... 5-5
Figure 5-2: Design Configurations Proposed After the FEIS/ROD ..... 5-10
Figure 5-3: Whitefish Transportation Plan Alternative Scenarios ..... 5-13

# LIST OF TABLES

Page No.

Table 1-1: Truck Percentages at Selected Intersections in the Corridor ..... 1-18
Table 1-2: MDT Operational Standards for Urban Roadways and Intersections ..... 1-20
Table 1-3: Peak Hour LOS for Signalized Intersections in the Corridor ..... 1-21
Table 1-4: Peak Hour LOS for Unsignalized Intersections on the US 93 and Baker Avenue .... 1-22
Table 1-5: Crosswalks Along the US 93 Corridor and Baker Avenue ..... 1-27

Table 2-1: Historic Population Growth in Whitefish, Flathead County and the State of Montana (1960-2000) ..... 2-8
Table 2-2: Current Population Estimates and Growth Rates ..... 2-9
Table 2-3: Underserved Populations in Whitefish as Compared to County and State Averages ..... 2-12
Table 2-4: Mode of Transportation to Work ..... 2-13
Table 2-5: City of Whitefish Employment by SIC Industry (1980-2000) ..... 2-15

Table 3-1: Current and Future Modeled Traffic Volumes on US 93 and Baker Avenue ..... 3-6

Table 5-1: Alternatives or Strategies from the FEIS/ROD Receiving Initial Consideration in the Corridor Study ..... 5-9
Table 5-2: Options Receiving Initial Consideration in the Corridor Study ..... 5-15

Table 6-1: Pre-Screening Evaluation of Corridor Options and Strategies ..... 6-7
Table 6-2: Relevant Measures of Effectiveness (MOEs) ..... 6-12
Table 6-3: MOE Ratings for Design Options – Current (2003) Conditions ..... 6-13
Table 6-4: MOE Ratings for Design Options – 2030 Conditions ..... 6-15
Table 6-5: Options Not Advanced to Second-Level Screening ..... 6-26

Table 7-1: Overall Level of Service at Signalized Intersections Contra-flow Configuration ..... 7-2
Table 7-2: Overall Level of Service at Signalized Intersections Modified Alternative C (Offset) Configuration ..... 7-3
Table 7-3: Level of Service at Unsignalized Intersections Contra-flow Configuration ..... 7-4
Table 7-4: Level of Service at Unsignalized Intersections Modified Alternative C (Offset) Configuration ..... 7-5
Table 7-5: Planning-Level Cost Estimate for Corridor Improvements Contra-Flow Configuration ..... 7-19
Table 7-6: Planning-Level Cost Estimate for Corridor Improvements Modified Alternative C (Offset) Configuration ..... 7-20

# EXECUTIVE SUMMARY

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## INTRODUCTION

The Montana Department of Transportation (MDT) in cooperation with the City of Whitefish and the Montana Federal Highway (FHWA) Division Office began a corridor planning process for a section of U.S. Highway 93 (US 93) within the central portion of the city. US 93 is on the National Highway System and serves as an important north/south transportation route in western Montana. The roadway also functions as one of Whitefish's main arterials accommodating access to commercial, residential, and recreational areas within the community.

The focus of this study encompasses US 93 from its intersection with 13th Street northward along Spokane Avenue to 2nd Street and 2nd Street from Spokane Avenue through Baker Avenue. This area corresponds to the previously established limits for MDT's Whitefish Urban project. A broad study area generally bounded by Karrow Avenue, Railway Street, Somers Avenue, and 18th Street was established to ensure areas beyond the limits of the Whitefish Urban Corridor received consideration.

MDT and FHWA have considered improving US 93 through the community since the late 1980's. An Environmental Impact Statement (EIS) was completed in 1995 that identified necessary improvements for the facility. Design work for two additional reconstruction projects—the Whitefish Urban and Whitefish West projects—began in early 2005. The design of Whitefish West project has advanced, while design work on the Whitefish Urban project was suspended due to increased traffic, changing community conditions and updated local planning documents. This Study allows for evaluation of corridor needs based on the new information and changed conditions.

This Corridor Study has been developed concurrently with the Whitefish Transportation Plan, a broad community-wide look at the transportation system and its future needs. The work for the Transportation Plan helped analyze conditions within the corridor and provided an overall framework for recommending corridor improvements.

The study examines the existing transportation system within the corridor and how the system could be changed to meet short and long-term needs. The study process was collaborative and involved MDT, FHWA, the City of Whitefish, a Citizens Advisory Committee (CAC), resource agencies, and the public in helping to identify transportation problems and effective solutions.

This Corridor Study is a pre-NEPA (National Environmental Policy Act) and pre-MEPA (Montana Environmental Policy Act) study. This study allows MDT flexibility in examining options for the roadway system to determine recommendations for the corridor taking into account new information, changed conditions and the recently developed Whitefish Transportation Plan.

## EXISTING TRANSPORTATION CONDITIONS

The Corridor Study provides a planning level look at the existing road and street network and its operational characteristics. Current traffic volumes, levels of service (LOS), and the recent crash history on US 93 and adjoining roadways were examined to help establish existing conditions and operational problems. This assessment identified the following key findings:

- Traffic volumes on US 93 and other corridor roadways have steadily increased over the last decade above what was projected in the EIS.
- The signalized intersections on 2nd Street at Spokane and Baker Avenues currently function at a poor overall level of service during peak hours.
- Spokane Avenue (north of Riverside Avenue), 2nd Street (west of Baker Avenue), and Baker Avenue (between 6th and 13th Streets) are approaching or exceeding their estimated capacity volumes.
- Truck traffic along the US 93 corridor occasionally inhibits traffic flows and affects operations at intersections in the downtown area. 2nd Street's intersections with Spokane and Baker Avenues—cannot accommodate the full range of truck movements.
- The types of collisions (rear-ends, right-turn and right-angle collisions, sideswipes, and left turn collisions) seen within the corridor are typical of roadways experiencing periods of traffic congestion.
- Spokane Avenue, 2nd Street, and Baker Avenue are part of the City of Whitefish's existing and planned pedestrian and bicyclist trail network
- Whitefish is well served by rail transportation; however, other forms of public transportation are seasonal or focused on special needs groups.

## COMMUNITY CHARACTERISTICS

This section provides an overview of demographic characteristics in the City of Whitefish including data on population growth trends, race, age, and ethnicity as well as data on household income and size and community travel characteristics. Population growth trends, household characteristics, and employment patterns are key factors in gauging transportation needs in Whitefish. Key findings include:

- Population estimates show Whitefish as the fastest growing incorporated area in Montana over the 2000 to 2008 period.

- Health and professional services, retail trade, and services associated with the tourism industry constitute the primary employers.

- Growth Policy projections shows the City's population could range from 8,800 to 14,600 residents and the City's planning jurisdictional area could have between 14,800 and 27,800 residents by the year 2030.

- The Whitefish travel demand model projects the number of housing units will increase by nearly 6,900 and more than 5,700 jobs will added by the year 2030.

- While the downturn in the national economy in recent years has slowed growth and economic development, it is very likely that Flathead County and the City of Whitefish will remain among the state's top growth areas over the long term.

## ENVIRONMENTAL SCAN

An environmental scan was conducted to identify environmental issues with the potential to influence the type, location, or design of improvements to US 93 within the corridor. The most notable environmental considerations identified through this effort include:

- The potential effects to the Whitefish River and associated riparian wetlands,

- The potential to encounter contaminated sediments at several locations where Spokane and Baker Avenues cross the river;

- The existence of historic-age properties along corridor roadways; and

- The potential for noise levels to increase at some residences along Spokane and Baker Avenues as traffic volumes grow.

Future NEPA/MEPA compliance processes must consider these and other potential environmental effects from corridor improvements.

## FUTURE TRAFFIC CONDITIONS AND TRANSPORTATION NEEDS

Future traffic conditions on the US 93 corridor were assessed based on operational analyses using the results of travel demand modeling for the year 2030. The travel demand model takes into account socio-economic characteristics and growth projections for the community through the allocation of new housing units and employment. These allocations were consistent with the assumptions about future growth and development from the Growth Policy.

- The travel demand model forecasts substantial increases in traffic volumes

throughout the Whitefish area by the year 2030. These future modeled traffic volumes all range from 1.2 to 2.0 times higher than modeled volumes for existing conditions.

- Numerous segments on the US 93 corridor and Baker Avenue already operate at or near their capacities; therefore, the ability of these existing roadways to accommodate traffic flows would continue to decrease as traffic volumes increase in the future.

- By the year 2030, the unsignalized intersections along Spokane and Baker Avenues will operate at a poor LOS for the side street traffic during peak hours. The US 93 through traffic movements continue to operate at an acceptable level.

## CORRIDOR ISSUES AND OVERALL VISION

Comments on issues associated with the reconstruction of US 93 through Whitefish and general community transportation concerns have been received from interested agencies and the public through a variety of past projects. Based on input from past projects and new work done for this corridor study, the following vision statement for the Whitefish Urban corridor was drafted:

***"The US 93 Whitefish Urban corridor serves as an important regional and local transportation link and helps support the economic, social, and recreational structure of the community. Future development of US 93 through the Whitefish urban area should effectively serve personal travel and goods movement within and through the corridor and provide safe transportation facilities for residents, community visitors, and through travelers.***

***Transportation improvements should provide mobility on the corridor while complementing community land use visions and plans, be adaptable to accommodate future growth, and help maintain or enhance Whitefish's unique character and quality of life. Transportation improvements should resolve site-specific operational or safety problems along the corridor and be designed and implemented in a way that protects the natural environment."***

A preliminary set of goals and associated objectives to support the vision were developed for review by MDT, FHWA, the City of Whitefish, a Citizens Advisory Committee and the public. These goals and objectives provided the basis for the development and evaluation of design configurations and transportation strategies for the corridor. The corridor vision, goals, and objectives were also determined to be consistent with the purpose and need for improving the US 93 corridor elaborated in the U.S. Highway 93 Somers-Whitefish West Final EIS.

## DESIGN CONFIGURATIONS AND STRATEGIES CONSIDERED

A wide variety of design configurations incorporating Spokane Avenue, 2nd Street,

Baker Avenue and 13th Street as well as other transportation strategies were initially considered to help address immediate concerns and long-term needs within the corridor.

**Table 1** provides a complete list of design options and strategies initially considered in this study. The table identifies design configurations that were evaluated in detail in the U.S. Highway 93 Somers to Whitefish West FEIS/ROD. The middle column lists the four design configurations that have been developed for the corridor since the FEIS/ROD was issued. The right column shows other strategies that may be applicable to the corridor. Many of these strategies were also previously considered in the FEIS/ROD.

### Table 1: Design Options and Strategies Considered for the Corridor

| Design Configurations Evaluated in the FEIS/ROD | Design Configurations Developed After the FEIS/ROD | Other Options or Transportation Strategies Warranting Consideration |
|---|---|---|
| No-Action<br>Alternative A (Four-Lane)<br>Alternative C (Couplet 1)<br>Alternative C (Couplet 2)<br>**Alternative C (Couplet 3) – FEIS/ROD PREFERRED ALTERNATIVE**<br>Alternative C (Couplet 4)<br>Alternative C (Offset) | Modified ROD Configuration<br><br>Contra-Flow Configuration<br><br>Truck Route Configuration<br><br>Downtown Business District Master Plan Configuration | **Other Options**<br>Western Route Alternates (FEIS Bypass Alternatives A-D)<br><br>Selected Off-system Improvements Indirectly Benefiting the Corridor<br><br>**Transportation Strategies**<br>Transportation Demand Management<br>Transportation System Management<br>Transit Improvements<br>Intelligent Transportation Systems |

## EVALUATION OF DESIGN CONFIGURATIONS AND STRATEGIES

A multi-step screening process was used to determine how well the design configurations and transportation strategies shown above address the goals and objectives for improving the corridor.

The first step in the screening process was a "fatal flaw" review to identify improvements or actions that fail to support the overall goals for the US 93 corridor or that are unrealistic and have little or no reasonable chance of being implemented.

The remainder of the screening process focused on the evaluation of design configurations against a comprehensive set of first-level and second-level screening criteria found in **Table 6-2**. Several other considerations were examined to help identify promising design options. Each configuration was evaluated against criteria in five additional screening categories including:

- Safety Considerations,

- Consistency with Applicable Geometric Design Criteria,
- Potential Environmental Effects,
- Feasibility/Affordability, and
- Compatibility with Local Plans and Community Ideals.

Two design configurations— the Alternative C (Offset) Configuration and the Contra-Flow Configuration—were selected for more extensive review based on the results of the screening assessments. These configurations were advanced for the following reasons:

The operational reviews showed the Contra-Flow Configuration ranked as the one of the best performing options under current and future conditions.

Due to the anticipated high cost of providing a bridge at 7th Street and its associated environmental effects, there is merit to evaluating an option that does not include a bridge. The Alternative C (Offset) Configuration reflects the existing street network and does not require adding any new roadway links.

The overall performance of the Offset configuration is inhibited by the lack of dedicated turning lanes at the signalized intersections along the corridor, particularly on 2nd Street. Further review showed the operation of the Alternative C (Offset) Configuration can be enhanced by modifying the conditions at the signalized intersections. Therefore, the **Modified Alternative C (Offset) Configuration** was identified as a "new" configuration. Since the Modified Alternative C (Offset) performs better and is more consistent with local plans, the configuration was advanced over the Alternative C (Offset) Configuration (shown below).

**CONTRA-FLOW CONFIGURATION**

**MODIFIED ALTERNATIVE C (OFFSET) CONFIGURATION**

The screening process recognizes that a balance needs to be struck between the ability to meet current and future transportation needs, the potential environmental effects, the overall cost of implementing corridor improvements, and the desires of the community as expressed in local plans. The Contra-Flow and Modified Alternative C (Offset) Configurations are both recommended for final consideration. Each of the options has inherent advantages and disadvantages and there are notable tradeoffs with implementing one option over the other. The issues and concerns of importance to future decision-makers are highlighted below.

## CAPACITY AND TRAFFIC OPERATIONS

The ability to address current and projected future travel demands is the key operational consideration for the US 93 corridor. Providing a new bridge at 7th Street and extending 7th Street eastward to Kalispell Avenue as called for under the Contra-Flow Configuration could decrease traffic on Spokane Avenue, 2nd Street, and portions of Baker Avenue by 15% to 20%.

The Modified Alternative C (Offset) Configuration relies on the use of Baker Avenue south of 7th Street and 13th Street to accommodate corridor traffic. Cross over traffic between Spokane and Baker Avenues is accommodated at 13th Street instead of by a new connection at 7th Street.

The Contra-Flow Configuration generally outperforms the Modified Alternative C (Offset) under current and future conditions. The operational review showed that under the Contra-Flow Configuration, users would experience fewer delays and could more efficiently travel through the corridor.

Both options provide alternative routes for trucks which could potentially reduce the amount of truck traffic on 2nd Street. The Contra-Flow Configuration would divert truck traffic to Baker Avenue at 7th Street and the Modified Alternative C (Offset) Configuration would divert trucks to Baker Avenue via 13th Street.

## SAFETY CONSIDERATIONS

Both options represent an increase in overall safety on US 93 when compared to existing conditions. However, increased left turn conflicts may be expected since southbound traffic on Spokane Avenue and northbound traffic on Baker Avenue would need to cross two opposing lanes. Although the crossing distance would not change, pedestrians crossing Spokane and Baker Avenues would need to cross three travel lanes instead of two lanes.

## CONSISTENCY WITH GEOMETRIC DESIGN CRITERIA

Both options could be designed in a manner that complies with MDT's design guidance for urban principal arterials. Increased corner radii could be provided as needed at Spokane Avenue and 2nd Street and at 2nd Street and Baker Avenue where the current layouts do not accommodate a full range of truck movements.

### POTENTIAL ENVIRONMENTAL EFFECTS

The Contra-Flow Configuration depends on the provision of a new connection at 7th Street linking Spokane and Baker Avenues. The new connection occurs at a location where the Whitefish River channel and its associated riparian zone are substantially wider than other locations in the area. This necessitates the provision of a 500-600 foot-long bridge across the river.

Adding capacity (width) to the existing bridge over the Whitefish River on Baker Avenue would be required for both configurations. Work within the Whitefish River would be subject to federal and state regulations protecting water quality and the City's Critical Area Ordinance.

New right-of-way (including a business acquisition) would be needed to accommodate the construction of 7th Street between Spokane and Kalispell Avenues and the new 7th Street river crossing. The Contra-Flow Configuration may also require the acquisition of new right-of-way along Baker Avenue between the Whitefish River and 7th Street.

With the Modified Alternative C (Offset) Configuration, Baker Avenue between 7th and 13th Streets and 13th Street would need to be rebuilt to provide the desired configuration and accommodate road widening. Additional right-of-way would be required along Baker Avenue in some areas from the Whitefish River crossing to 13th Street.

### COST AND AFFORDABILITY

The current cost to construct the improvements associated with Contra-Flow Configuration is estimated to be $20 million (including contingencies). Providing the required bridge at 7th Street and extending 7th Street east of Spokane Avenue accounts for about half of the total estimated cost.

Cost estimates show the improvements for the Modified Alternative C (Offset) Configuration is $11 million (including contingencies).

Decision-makers must determine if the operational benefits justify the additional costs and potential environmental effects associated with the Contra-Flow Configuration.

### COMPATIBILITY WITH LOCAL PLANS

Both options provide a two-lane configuration and would retain some on-street parking along 2nd Street. With the exception of Spokane Avenue between 7th and 2nd Streets, the lane configuration of the Contra-Flow option is generally consistent with local plans.

Some in the community oppose a new bridge at 7th Street due to its effects on the Whitefish River and associated riparian habitat and the bridge's high cost.

## FUTURE DESIGN CONSIDERATIONS FOR THE CORRIDOR

Both the Contra-Flow and Modified Alternative C (Offset) Configurations maintain US 93

traffic on Spokane Avenue and 2nd Street, include upgrades to portions of Baker Avenue between 2nd and 13th Street, and rely on connections at either 7th or 13th Streets to help meet future travel demands. Design elements and recommendations from past planning efforts—including the U.S. Highway 93 Somers to Whitefish West FEIS/ROD and local plans—were considered in the development of future design considerations for corridor roadways. These considerations are highlighted below.

**SPOKANE AVENUE**

- Both configurations provide a three-lane roadway accommodating two northbound driving lanes, one southbound driving lane along Spokane Avenue north of 7th Street.

- Coordination with the City will be necessary during the development of improvements for Spokane Avenue to consider the streetscape enhancements recommendations and determine the extent to which they can be incorporated without adversely affecting funding and future operation of US 93.

- The use of raised, landscaped medians and left turn provisions for northbound traffic at several locations to serve commercial uses west of Spokane Avenue between 7th and 13th Streets may be desirable.

- The large-diameter culverts conveying the Whitefish River beneath Spokane Avenue have considerable remaining service life; however, local preferences are to install a new bridge when the culverts are replaced.

**2ND STREET**

- Both configurations:
  - Maintain a two-lane roadway within the existing roadway "footprint" that accommodates one lane in each direction and allows for some on-street parking along 2nd Street consistent with local plans
  - Provide appropriate dedicated turn lanes at 2nd Street's intersections with Spokane and Baker Avenues and prohibiting left turns from 2nd Street onto Central Avenue is required to facilitate traffic operations with either option
  - Require evaluation of traffic signals
  - Require minor right-of-way acquisitions on the intersection of 2nd and Spokane

- A 2006 District Court ruling prohibits MDT from acquiring property from the First American Bank property (located on the northwest corner of the 2nd and Baker intersection) through condemnation. Future improvements to the intersection of would have to be completed without acquiring any right-of-way from American Bank.

- Local plans include recommendations for desired design elements and streetscape enhancements along 2nd Street. Coordination with the City of Whitefish will be necessary during the development of improvements for 2nd Street to consider the

recommendations and determine the extent to which they can be incorporated without adversely affecting funding and future operation of US 93.

**BAKER AVENUE**

- Both configurations provide a three-lane roadway accommodating two southbound driving lanes and a northbound driving lane between 2nd and 7th Streets. The Modified Alternative C (Offset) option continues the three-lane configuration south of 7th Street to 13th Street.

- The existing bridge structure over the Whitefish River will need to either be widen or replaced with a new structure to accommodate additional lanes.

- New right-of-way acquisition is anticipated south of the Whitefish River to accommodate roadway widening.

**7TH STREET**

- The Contra-Flow Configuration would provide a three-lane roadway accommodating two eastbound driving lanes and a westbound driving lane between Spokane and Baker Avenues. The Modified Alternative C (Offset) Configuration would not provide a roadway connection at 7th Street.

- The Contra-Flow Configuration would provide a new connection between Spokane and Kalispell Avenues. New right-of-way (including a business acquisition) would be needed to accommodate the construction and the new river crossing.

- The installation of traffic signals and the addition of appropriate turn lanes would be required at the intersections with Spokane and Baker Avenues.

**13TH STREET**

- The Modified Alternative C (Offset) Configuration would provide a three-lane roadway accommodating one westbound driving lane and two eastbound driving lanes between Spokane and Baker Avenues. The Contra-Flow Configuration would not involve any improvements to 13th Street.

- A new traffic signal and dedicated turn lanes would be needed at the intersection of Baker Avenue and 13th Street.

- Areas of new right-of-way acquisition are anticipated along Baker Avenue south of the Whitefish River to accommodate roadway widening and the provision of dedicated turn lanes at Baker Avenue and 13th Street. Commercial buildings along 13th Street limit available right-of-way

**PEDESTRIAN AND BICYCLIST**

- Consider the policies and recommendations for pedestrian and bicyclist facilities identified in local plans and coordinate with the City about how future corridor improvements can facilitate their implementation.

- Ensure that sidewalks at least 5-feet wide are provided along each side of corridor roadways and install or modify curb ramps at intersections where needed to meet current Americans with Disabilities Act (ADA) requirements.

- Right-of-way limitations and traffic operations likely preclude the addition of bicycle lanes along both sides of 2nd Street; however, consideration should be given to providing 5-foot wide bicycle lanes along each side of Spokane and Baker Avenues.

## CORRIDOR IMPROVEMENT PRIORITIES

This study outlines a desired sequencing for implementing the recommended improvements. The recommended sequencing recognizes that federal and state funding for corridor improvements will likely be limited over the foreseeable future. Another consideration for determining a desired sequencing for improvements was the need to have adequate alternate routes for local and through traffic in place during reconstruction activities on Spokane and Baker Avenues.

Given the funding situation and other uncertainties related to the timing of downtown redevelopment projects, there was no attempt to identify when the recommended improvements should be implemented over the planning horizon for the corridor study. However, the following priorities were established for implementing corridor-related improvements:

**CONTRA-FLOW CONFIGURATION**

PRIORITY 1: 2nd Street Improvements and Signal Upgrades
PRIORITY 2: Add Capacity to the Baker Avenue Bridge
PRIORITY 3: Baker Avenue Reconstruction/Upgrades
PRIORITY 4: 7th Street Bridge and 7th Street Connection
PRIORITY 5: Spokane Avenue Reconstruction/Upgrades

**MODIFIED ALTERNATIVE C (OFFSET) CONFIGURATION**

PRIORITY 1: 2nd Street Improvements and Signal Upgrades
PRIORITY 2: Add Capacity to the Baker Avenue Bridge
PRIORITY 3: Baker Avenue and 13th Reconstruction/Upgrades
PRIORITY 4: Spokane Avenue Reconstruction/Upgrades

## ESTIMATED COSTS FOR CORRIDOR IMPROVEMENTS

Planning-level cost estimates were developed for the two corridor improvement configurations under review. The estimates include construction costs based on typical unit costs for recent MDT highway projects, a representative cost for right-of-way, and costs for mobilization and contingencies. The estimates provided in **Table 3** are very preliminary and may change substantially based on more detailed engineering and design activities.

## Table 3: Estimated Construction Costs for Corridor Improvements

### CONTRA-FLOW CONFIGURATION

| Associated Improvements | Current Cost (in millions) |
|---|---|
| 2nd Street Improvements and Signal Upgrades | $2.02 |
| Add Capacity to the Baker Avenue Bridge | $1.45 |
| Baker Avenue Reconstruction/Upgrades | $2.07 |
| 7th Street Bridge and 7th Street Connection | $11.22 |
| Spokane Avenue Reconstruction/Upgrades* | $4.05 |
| **TOTAL** | **$20.81M** |

* Does not include the cost of replacing the culverts for the Whitefish River on Spokane Avenue with a new bridge.

### MODIFIED ALTERNATIVE C (OFFSET) CONFIGURATION

| Associated Improvements | Current Cost (in millions) |
|---|---|
| 2nd Street Improvements and Signal Upgrades | $2.02 |
| Add Capacity to the Baker Avenue Bridge | $1.45 |
| Baker Avenue and 13th Reconstruction and Upgrades | $3.79 |
| Spokane Avenue Reconstruction/Upgrades* | $3.60 |
| **TOTAL** | **$10.86 M** |

* Does not include the cost of replacing the culverts for the Whitefish River on Spokane Avenue with a new bridge.

**Table 3** shows the estimated current total cost of improvements to these roadways under the Contra-Flow Configuration ranges from $20.81 million as compared to $10.86 million for the Modified Alternative C (Offset) Configuration. These cost estimates do not include providing a new bridge for the Whitefish River on Spokane Avenue. Replacing the culverts beneath Spokane Avenue with a bridge and making locally desired non-motorized trail connections would increase the estimated cost of each configuration by about $4.6 million.

Assuming a 3 percent annual rate of inflation, the cost of projects within the corridor could be 19 percent higher than current estimates by the year 2015 and 86 percent higher than current estimates by the year 2030.

# POTENTIAL FUNDING SOURCES AND IMPLEMENTATION

- Spokane Avenue and 2nd Street are on the National Highway System (NHS) and are eligible for federal and state fund administered through the NHS Program.

- Baker Avenue north of 7th Street is a state-designated Urban Route and eligible to receive Surface Transportation Program - Urban (STPU) funds.

- Baker Avenue (south of 7th Street) and 13th Street between Spokane and Baker

Avenues are not on the state-designated system and therefore not eligible for federal or funds.

- Other local government funding sources could help accomplish portions of the proposed projects, pay for desired amenities, or be used to implement off-system projects that would indirectly benefit the US 93 corridor.

# NEXT STEPS

## COMPLETE THE ENVIRONMENTAL REVIEW PROCESS

Before federal and state funding can be programmed for the corridor improvements and design activities can actually begin, the environmental review process to document NEPA/MEPA compliance must be completed. This process would require the completion of a re-evaluation of the Final EIS as it relates to the Whitefish Urban project area to determine the need for the preparation of Supplemental EIS. FHWA, in consultation with MDT, would need to make a decision about the appropriate environmental review process and ultimately revise the Record of Decision for the Whitefish Urban project area.

## DETERMINE A LONG-RANGE FUNDING PLAN FOR CORRIDOR IMPROVEMENTS

MDT, FHWA and the City of Whitefish will need to develop a funding plan to implement corridor improvements. Committing federal funding to corridor improvements will require that projects be nominated and programmed by MDT through its Statewide Transportation Improvement Program (STIP) process.

MDT and the City of Whitefish would need to develop cost sharing agreements to specify which entity would be responsible for funding the amenities included with the recommended corridor improvements.

## BEGIN DESIGN ACTIVITIES FOR CORRIDOR IMPROVEMENT PROJECTS

After completion of the environmental review process and funding becomes available, the design activities can be initiated on recommended improvements projects.

Coordination would need to occur to ensure that designs incorporate any necessary or planned infrastructure work by the City and to identify amenities that would be part of the improvement projects. Design activities would also identify and facilitate necessary right-of-way acquisitions within each project area.

# INTRODUCTION

# INTRODUCTION

Improvements to U.S. Highway 93 (US 93) through Whitefish have been discussed since 1988 when an Environmental Assessment/Finding of No Significant Impact (EA/FONSI) was prepared and approved by the Montana Department of Transportation (MDT) and the Federal Highway Administration (FHWA). In 1992, due to public concerns that the EA/FONSI did not adequately address the social, economic and environmental effects of rebuilding US 93, MDT and FHWA decided to prepare the U.S. Highway 93 Somers to Whitefish West Environmental Impact Statement (EIS). The EIS addressed improvements to US 93 from Somers (located south of Kalispell) to a location about 6 miles west of Whitefish.

During the EIS project, the issues associated with improving US 93 within the community were explored, improvement options and strategies were developed and analyzed, the impacts of making such improvements were assessed, and a Preferred Alternative for improving the facility was identified in the Record of Decision (ROD) for the Final EIS. After the ROD was approved by the FHWA in late 1994, the MDT began work to design and implement the recommended configuration for US 93.

Reconstruction of US 93 at the southern edge of Whitefish was completed in 1998 and design work for two additional reconstruction projects on US 93— known as Whitefish Urban and Whitefish West—began in early 2005. Although the design of Whitefish West project has proceeded, changing community conditions and input received from recent planning projects prompted MDT to suspend work on the Whitefish Urban project until a corridor study and community-wide transportation plan are completed.

MDT, in cooperation with the City of Whitefish, initiated work on the Whitefish Urban Corridor Study and the Whitefish Transportation Plan in 2007 and retained Robert Peccia & Associates to conduct work on both projects. The Whitefish Urban Corridor Study provides a focused look at the transportation needs and improvement options for US 93 in the Whitefish Urban project area. The Whitefish Transportation Plan, completed in 2010, examines transportation issues in a broader context, evaluates existing and future traffic operations, and identifies long-range transportation system needs for the greater Whitefish community.

## CORRIDOR STUDY AREA

The City of Whitefish, the second largest incorporated area within Flathead County, lies 9 miles northwest of Columbia Falls and 15 miles north of Kalispell. The city is situated at the southern end of Whitefish Lake at the northern edge of the Flathead Valley. Timber, farming and the railroad have historically provided the economic foundation for Whitefish; however, in recent years and the community has become known as a top tourist and recreational destination due to its proximity to Glacier National Park, the Whitefish Mountain Resort, and abundant public lands. These amenities have fostered

considerable growth within the community over the last two decades. Whitefish is served by US 93, a major north-south route connecting Canada with the western United States, and by Montana Highway 40 which connects with U.S. Highway 2, a major east-west highway located about 7 miles east of the community.

The Whitefish Urban Corridor encompasses a portion of US 93 and adjoining roadways located in the central part of the City of Whitefish. A focus of this study is the section of US 93 from its intersection with 13th Street (Reference Post 126.9) northward along Spokane Avenue to 2nd Street and 2nd Street from Spokane Avenue to just west of Baker Avenue (Reference Post 127.8). This area corresponds to the previously established limits for the Whitefish Urban project—designated as Project Number NH 5-3(80)127, UPN 4781 by MDT.

A broad study area was established to ensure areas beyond the limits of the Whitefish Urban Corridor received consideration. The study area encompasses the locations where multiple alternatives for the improvement of US 93 were proposed in the U.S. Highway 93 Somers to Whitefish West FEIS/ROD. Specifically, these "Whitefish Area Alternatives" included various roadway configurations incorporating the existing sections of US 93 (Spokane Avenue and 2nd Street), Baker Avenue between 2nd Street and 13th Streets, and existing or new links between Spokane and Baker Avenues.

## PURPOSE OF THE CORRIDOR STUDY

The purpose of this study is to determine the long-term needs of the Whitefish Urban corridor and to establish a plan for meeting these needs. Consideration was given to the needs of non-motorized facility users as well as to vehicular needs. The corridor study relied on a collaborative process involving MDT, FHWA, the City of Whitefish, a Citizens Advisory Committee, other federal and state agencies, and the public to help identify and address transportation problems in the community. The primary goals of the corridor study included:

1) Linking land use and transportation planning efforts in the community;
2) Fostering interagency coordination;
3) Determining issues and environmental factors with the potential to influence the design of US 93 through Whitefish; and
4) Identifying and recommending appropriate design improvements and/or management strategies for meeting existing and future transportation needs.

To accomplish these goals, this study reviews existing conditions, establishes current and future transportation needs within the corridor, identifies an overall vision for improving the corridor, and evaluates alternate ways to address current and future transportation needs. The design options and strategies considered for the corridor were evaluated against a set of goals and objectives based on the overall vision for the corridor. The goals and objectives recognize the need to identify improvements that are viable to construct, financially feasible for MDT and FHWA to implement, and sensitive

to input received from the public and resource agencies. The study will generate products that can be used in future National Environmental Policy Act (NEPA)/Montana Environmental Policy Act (MEPA) compliance processes if recommended corridor projects are advanced by MDT, FHWA or the City of Whitefish.

## CORRIDOR STUDY PROCESS

The corridor study process looks at the existing transportation system within the corridor and how the system could be changed to meet long-term needs. The process includes discussion of existing and projected travel patterns and social, environmental, and economic issues within the corridor. It includes discussion of infrastructure improvements considering the land use and other community changes likely to be seen over the planning horizon.

The study process involved research, data collection, and incorporating public input to identify issues and environmental conditions relevant to the development of improvement options and strategies for US 93. An important part of this initial information gathering step was the completion of an environmental scan and a meeting with resource agencies to discuss environmental conditions with the potential to affect the design or location of US 93 through Whitefish. This information was used to help assess current and future transportation needs in the corridor and develop a set of goals and objectives to serve as an overall framework for evaluating corridor design options and strategies.

A wide range of design options and transportation strategies were identified and analyzed to determine their ability to address current and future transportation needs in the corridor. Recommended corridor improvements were ultimately identified based on: their ability to meet the transportation functions of US 93 and MDT's engineering design criteria: input received from resource agencies, local planning guidance, and the general public; and funding considerations.

This corridor study was developed concurrently with the Whitefish Transportation Plan. The work completed for the Transportation Plan helped with the analysis of existing conditions and identification of future transportation needs within the US 93 corridor and provided an overall framework for developing corridor recommendations. Similarly, findings and recommendations from the Corridor Study were incorporated into the Whitefish Transportation Plan.

## LINKING TRANSPORTATION PLANNING AND NEPA/MEPA

In early 2005, the FHWA issued guidance encouraging stronger linkages between the transportation planning and NEPA processes. The guidance was prepared based on the concern that the environmental analyses produced to satisfy NEPA requirements have often been disconnected from the products and analyses developed for long range transportation plans, statewide and metropolitan area transportation improvement

programs, and planning level corridor or small area plans. Without adequate coordination, the NEPA process may generate information that is more appropriately developed in the planning process, resulting in duplication of work and delays in transportation improvements. Alternately, transportation plans often contain projects that are recommended without due consideration of their potential environmental effects and ability to be realistically funded and implemented.

The overall purposes of the FHWA's 2005 guidance are to help ensure that transportation planning serves as a foundation for making sound decisions regarding highway projects and to better coordinate and manage transportation planning and NEPA processes to make efficient use of limited resources. The implementation of FHWA's guidance is voluntary for states. MDT has chosen to follow the guidance and extend it to its MEPA compliance requirements to help ensure the transportation planning process and the environmental analysis required during project development by NEPA/MEPA work together, with the results of the transportation planning process informing the NEPA/MEPA process.

The requirements for linking transportation planning and NEPA/MEPA were strengthened in 2007 when the FHWA issued regulations implementing changes in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). This recent legislation highlighted several key elements to be included in the planning process to enhance the linkage with NEPA/MEPA including purpose and need; public involvement requirements; the affected environment and environmental mitigation activities; the development, evaluation and elimination of alternatives; consultation with natural resource regulatory agencies; and documentation so planning products can be used in the NEPA/MEPA process. Making these linkages will result in savings in project development and implementation time and costs.

This Corridor Study is considered a pre-NEPA/MEPA document. Rather than formally reopening the US Highway 93 Somers to Whitefish West EIS as it relates to the Whitefish Urban corridor, a pre-NEPA/MEPA study allows MDT more flexibility in examining options for the roadway system. The supporting information, public processes, and recommendations from this Corridor Study and can be directly incorporated and relied upon to help streamline future NEPA/MEPA compliance activities for US 93 improvements through Whitefish.

## PUBLIC AND AGENCY INVOLVEMENT

The Corridor Study included a variety of activities to involve and solicit input from interested agencies and the public. Since the Transportation Plan and Corridor Study were being developed concurrently, many of the public and agency outreach activities for the Transportation Plan were also used as opportunities to convey information and obtain input relevant to the Corridor Study.

A brief summary of some of the project outreach activities utilized during the projects

development is provided below:

**Resource Agency Workshop:** A Resource Agency Workshop was held on May 24, 2007 at MDT's Rail, Transit, and Planning Office in Helena. The purposes of this workshop were to: 1) introduce the Consultant Team to agency representatives; 2) provide an overview of the community-wide Transportation Plan and Corridor Study projects; 3) compare and contrast the corridor planning and NEPA/MEPA processes; 4) discuss existing conditions within the US 93 corridor and identify known corridor resource issues and concerns; and 5) solicit input from agency representatives on environmental resources along and affected by the highway corridor through Whitefish and possible regulatory concerns.

**Citizen Advisory Committee (CAC) Meetings:** A Citizens Advisory Committee (CAC) was established for Whitefish Transportation Plan and Corridor Study to act as a sounding board to the Consultant team. The CAC was asked to look at the "bigger picture" regarding comprehensive transportation needs and issues in the Whitefish community. The role of the CAC for this project was to:

- Help identify critical issues relating to the transportation system in the Whitefish study area boundary, including the US Highway 93 urban corridor;
- Represent the diverse interests of the Whitefish community;
- Review project deliverables & comment as appropriate. ; and
- Convey other citizen input that may be received to the Consultant team.

The CAC met five times during the development of this Corridor Study—on April 17, 2007, July 16, 2007, January 8, 2008, and August 19, 2008. The final meeting with the CAC focused entirely on the Whitefish Urban Corridor Study was held on (currently pending). The CAC was provided with technical materials and draft reports in advance of scheduled meetings.

**Public Information Meetings**: Several public meetings were held during the study process. The first public open house informational meeting for the Transportation Plan and Corridor Study projects occurred on April 16, 2007 in the Whitefish City Council Chambers. This meeting focused on informing the public about the current transportation problems that had been identified to date, and receiving public comment on which issues should be addressed by the planning projects. A variety of key issues were identified including: 1) the need to plan for future growth; 2) to relieve traffic congestion; 3) to improve traffic safety; and 4) to provide alternatives to the automobile. Specific problem intersections and roadway corridors were identified and presented at this first meeting.

The second public open house informational meeting for the projects was held on July 17, 2007 in the Whitefish City Council Chambers. This meeting occurred after the analysis of the existing transportation system was completed. The effects of population growth and future land use changes on traffic volumes and transportation infrastructure

in the community were discussed. Again, the public had the opportunity to provide their opinions on transportation system issues in the community and corridor study area.

The third public meeting, focused on the Transportation Plan, was held at the O'Shaughnessy Center on Thursday, January 10, 2008. This meeting gave the public the opportunity to review the draft document in its entirety, including a thorough review of recommended projects that not only offered mitigation measures to solve existing transportation issues, but also measures to accommodate future growth issues.

A fourth public information meeting for the Whitefish Transportation Plan and Urban Corridor Study projects was held on August 19, 2008 in the Whitefish City Council Chambers. The meeting was used to: provide an update on the Whitefish Transportation Plan; describe identified corridor problems and needs; present an overall "vision" for the US 93 corridor and outline goals for corridor improvements; discuss preliminary design and improvement options and other strategies under consideration; and to solicit input from the public on any new ideas (improvement options) for the corridor.

**APPENDIX A** provides summaries of key public and agency meetings held during the development of the Corridor Study.

**Internet Access:** The results of the technical studies and analyses conducted during the study process were made available to the public on MDT's website for review and comment. This enabled the public to stay abreast of the developments occurring during the planning process. It also provided an opportunity for the public to submit comments.

## ORGANIZATION OF THE CORRIDOR STUDY

This Corridor Study has been organized into nine major parts which are summarized below.

- **Part 1.0** examines the existing transportation facilities and services in the corridor study area. The discussion focuses on the existing road and street network and its associated characteristics including the purposes the roadways are intended to serve, current traffic volumes, the performance of intersections in the corridor, and the crash history of corridor roadways.

- **Part 2.0** describes existing and planned land uses, applicable land use plans and regulations, and key population and socio-economic characteristics of the Whitefish community. The information describes how the community is likely to grow in the future and how the downtown area of Whitefish may be redeveloped in coming years. The results of an environmental scan to identify potential constraints to the development of corridor improvements are also presented.

- **Part 3.0** includes an examination of future traffic conditions and operations on the US 93 corridor. Operational analyses based on the results of travel demand modeling for the year 2030 were used to identify future traffic conditions and potential operational concerns within the corridor.

- **Part 4.0** summarizes the issues and concerns associated with the US 93 through Whitefish and presents an overall vision and goals for corridor improvements.

- **Part 5.0** identifies and discusses design configurations and transportation strategies to potentially address immediate and long-term needs within the corridor.

- **Part 6.0** contains an evaluation of the design configurations and transportation strategies for the US 93 corridor. The design configurations and strategies were initially examined for fatal flaws and to identify those with little or no chance of being implemented. A group of design configurations were advanced for more detailed evaluation based on a comprehensive set of screening considerations. Advantages and disadvantages associated with each design configuration are presented.

- **Part 7.0** presents a detailed evaluation of the two design configurations advanced from previous screening stages. The design configurations were evaluated to determine how each addressed detailed criteria associated with the six screening categories.

- **Part 8.0** highlights future design and project development considerations for the corridor.

- **Part 9.0** discusses potential funding sources for improvements to the US 93 corridor through Whitefish and other considerations relevant to the implementation of recommended projects.

Several appendices with supporting information are also included with this study.

# 1.0 EXISTING TRANSPORTATION CONDITIONS

# 1.0 EXISTING TRANSPORTATION CONDITIONS

This Part examines the existing transportation facilities and services in the study area. The discussion focuses on the existing road and street network in the corridor study area and its associated characteristics. The purposes the roadways are intended to serve, their physical conditions, current traffic volumes, the performance of intersections in the corridor, and the crash history of corridor roadways are described on the following pages. This section concludes with information about other types of transportation available in Whitefish including railroad facilities; bicycle and pedestrian facilities; and transit services. This summary of existing transportation conditions provides a base of knowledge that will inform future decisions about the corridor.

## 1.1 US 93 and Its Adjoining Road and Street Network

US 93 (shown on **Figure 1-1**) is located in the center of the Whitefish community and serves as the primary travel route through the City for both residents and visitors. The US 93 corridor within the City is comprised of US 93 south of 13th Street, Spokane Avenue from 13th Street to 2nd Street, and 2nd Street west of Spokane Avenue. MDT owns and maintains US 93 through the City.

US 93 functions as the "backbone" of a larger road and street network in Whitefish with notable intersecting roads and streets including: JP Road, West 18th Street/Greenwood Drive, 13th Street, the street network in the City's core area, and Karrow Avenue located west of downtown. Consequently, when congestion and poor service levels occur on US 93, the effects are not just confined to the state highway system. Poor performance on US 93 translates into delays and congestion on local cross streets, ultimately affecting the efficient movement of traffic on other important local collectors and arterials. This condition is made worse by the lack of alternate and continuous north-south or east-west routes in the community.

From south of the Montana Highway 40 intersection and extending to 13th Street, US 93 transitions from a five-lane rural highway with a painted center median/two-way left turn lane to a five-lane urban roadway consisting of two travel lanes in each direction and a center two-way left turn lane. This section of US 93 serves numerous highway-oriented businesses, restaurants and motels, and the Mountain Mall. North Valley Hospital and a large condominium development are located east of US 93 and north of Montana Highway 40.

North of 13th Street, the character of US 93 changes notably as the roadway transitions to a two-lane street. This section of US 93 serves highway-oriented businesses, professional offices, a traditional residential neighborhood, and a variety of uses in downtown Whitefish. This portion of US 93 has seen little work other than periodic maintenance since being reconstructed in the 1960s.

Baker Avenue, located two blocks west of Spokane Avenue, is a parallel north-south

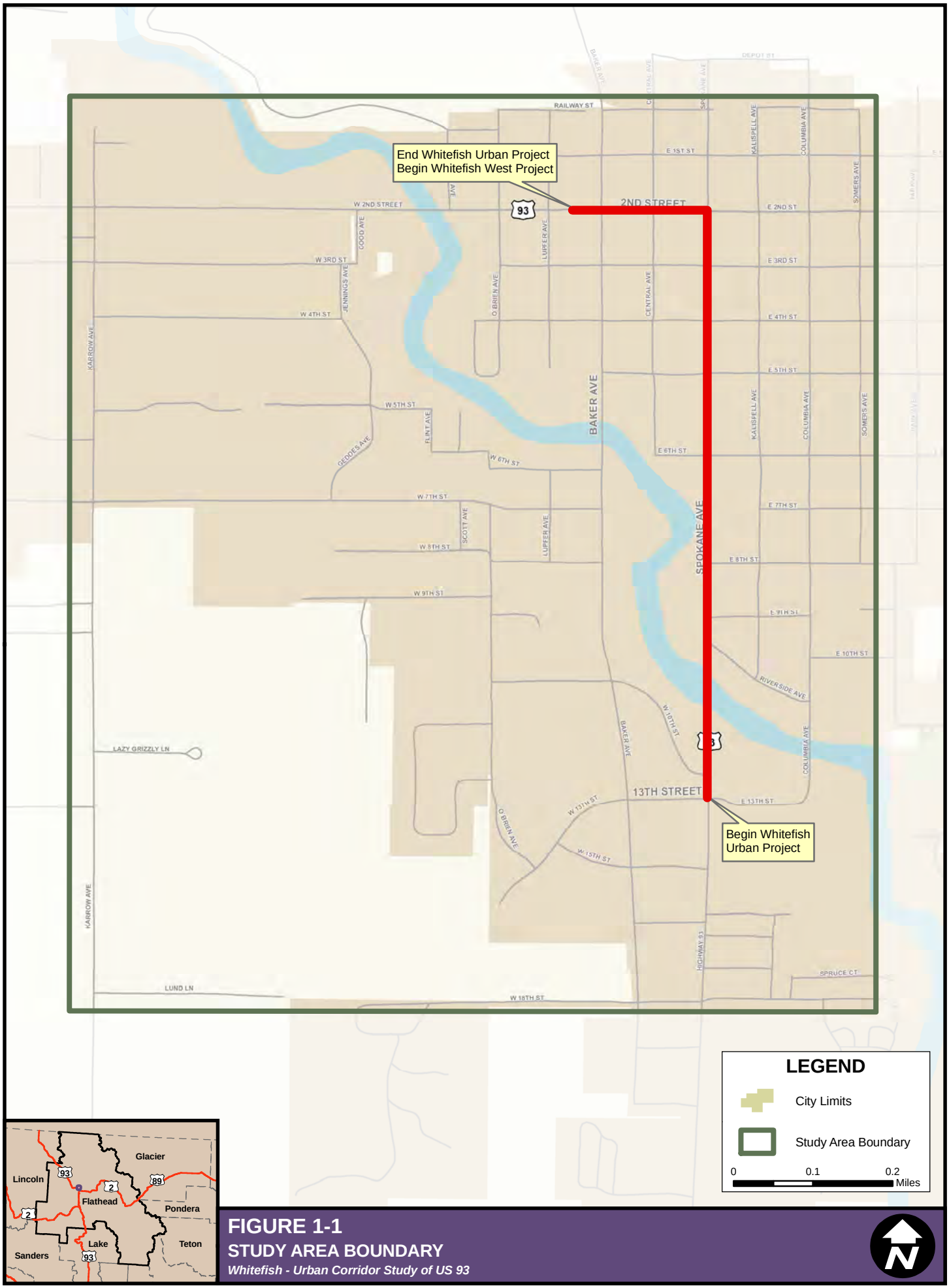



**FIGURE 1-1**

**STUDY AREA BOUNDARY**

***Whitefish - Urban Corridor Study of US 93***

street that extends from West 19th Street to Railway Street. Baker Avenue is of interest when considering potential configurations to accommodate US 93 traffic in downtown Whitefish because it is one of the few continuous north-to-south roadways that provides an alternate route to US 93. Baker Avenue also connects to the only grade-separated crossing of the BNSF Railway in Whitefish and links US 93 with Wisconsin Avenue, the principal route used to access Whitefish Mountain Resort.

Between 13th Street and 10th Street, Baker Avenue primarily serves commercial uses and professional offices. From 10th Street to the Whitefish River crossing, Baker Avenue serves a neighborhood consisting mostly of single family residences. North of the Whitefish River, Baker Avenue provides access to Riverside and Baker Parks and passes through the central business district before crossing over the BNSF Railway and transitioning to Wisconsin Avenue.

## 1.2 Functional Classification

US 93 is part of the Non-Interstate National Highway System (NHS) in Montana. The NHS consists of over 3,850 miles of the state's most important transportation routes including the Interstate highway system, other principal arterials, and other highways essential to the nation's strategic defense policy or that link military installations. US 93 links the Flathead Valley to I-90 west of Missoula and provides access to British Columbia, Canada via Eureka.

US 93 is functionally classified as a Principal Arterial. Baker Avenue is functionally classified as a Minor Arterial and portions of the route are on the state's Urban Highway System. Baker Avenue (between 2nd Street and Big Mountain Road) is designated as Urban Route U-12001. Baker Avenue between 2nd Street and 7th Street is designated as Urban Route U-12002. 13th Street is functionally classified as an Urban Collector.

Arterials provide the highest level of mobility, at the highest speed, for long uninterrupted travel. Arterials generally have higher design standards than other roads and many principal arterials have multiple lanes with some degree of access control. Principal arterials typically serve corridors with the highest traffic volume and those with the longest trip lengths. They carry most trips entering and leaving urban areas, and provide continuity for all rural arterials that intercept urban boundaries. Minor arterials provide connecting links to urban principal arterials.

Collectors provide a lower degree of mobility than arterials and are designed for travel at slower speeds and for shorter distances. In urban areas, the collector system provides traffic circulation within residential neighborhoods and commercial and industrial areas. Urban collectors also channel traffic from local roads onto the arterial system.

## 1.3 Existing Roadway Characteristics

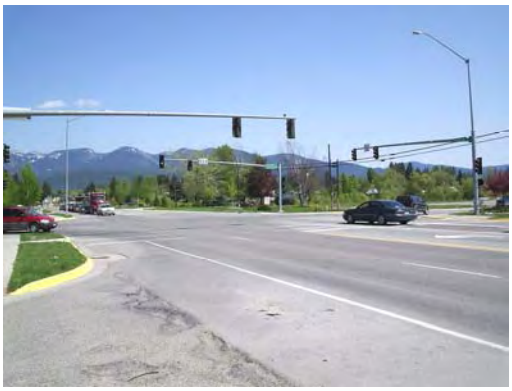
The following sections discuss the existing design configuration and other physical features of US 93 (Spokane Avenue and 2nd Street) and Baker Avenue within the corridor study area.

### 1.3.1 Lane Configurations and Typical Sections on US 93

South of 13th Street, US 93 has a 5-lane roadway design with curbs and gutters, four 12-foot wide through travel lanes, a 14-foot wide center two-way left turn lane, two 8-foot wide shoulders. A grassed buffer area and sidewalks parallel both sides of the highway in this area. MDT's *Montana Roadlog* shows that the roadway has a typical width of 81-feet in this area and narrows to 57 feet wide in the section where the roadway crosses the Whitefish River.

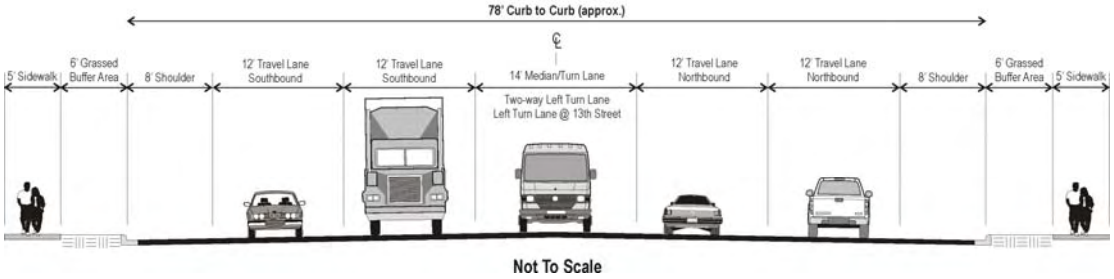
The design of this section of US 93 is illustrated in the following photograph and in **Figure 1-2**.

**SPOKANE AVENUE (SOUTH OF 13TH STREET)**



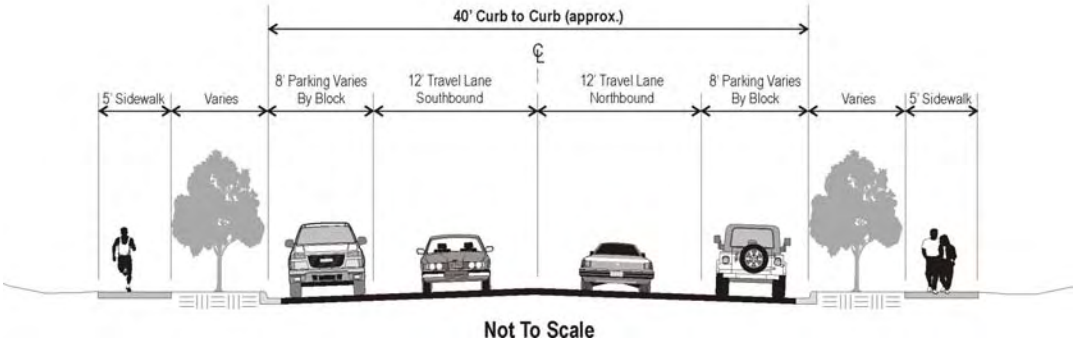
*Looking north along Spokane Avenue at 13th Street*

**FIGURE 1-2: Typical Section - US 93 (South of 13th Street)**



Spokane Avenue transitions from five-lanes to a two-lane street between 13th Street and the Whitefish River crossing. As shown in **Figure 1-3**, this section of Spokane Avenue is generally 40 feet wide and consists of two 12-foot wide driving lanes and two 8-foot wide shoulders or parking lanes. Between the Whitefish River crossing and 6th Street, a 5-foot wide sidewalk exists directly behind the curb along both sides of Spokane Avenue. Boulevards with mature trees and grass and 5-foot wide sidewalks are found along both sides of Spokane Avenue from 6th Street to 2nd Street. Bulb-outs have also been incorporated at 4th and 5th Streets to reduce crossing distances for pedestrians at these intersections.

## FIGURE 1-3: Typical Section- Spokane Avenue (2nd to 6th Street)




### SPOKANE AVENUE (13TH STREET TO 2ND STREET)

*Looking south along Spokane Ave.near 6th Street*

*Looking north along Spokane Ave. at 4th Street*

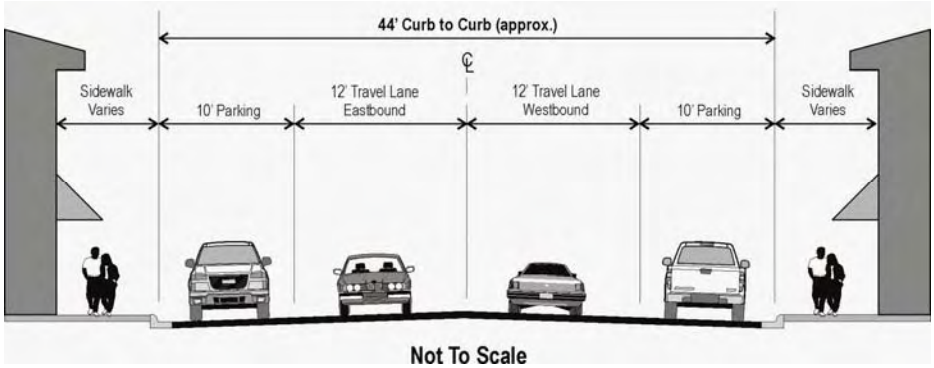
At 2nd Street, US 93 makes a 90-degree turn and continues west out of the City. West of Spokane Avenue, 2nd Street has an overall width of about 44 feet and consists of two 12-foot wide driving lanes, two 10-foot-wide parking lanes, and sidewalks directly behind the curb along each side of the street. **Figure 1-4** illustrates this design.

**2ND STREET (WEST OF SPOKANE AVENUE)**

*Looking west from Central Avenue*

*Looking east near Spokane Avenue intersection*

**Figure 1-4: Typical Section-2nd Street (Spokane to Baker)**




## 1.3.2 Lane Configurations and Typical Sections on Baker Avenue

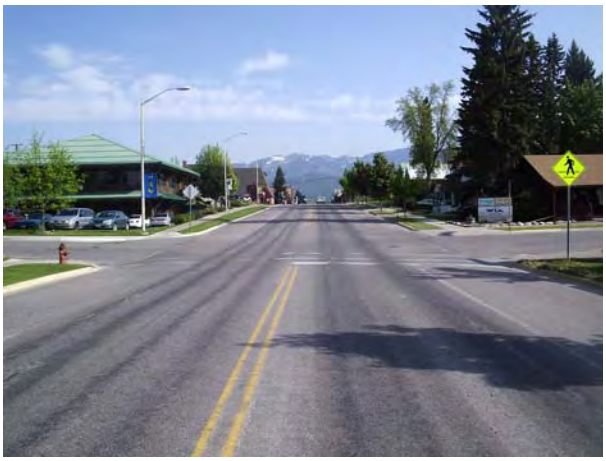
With the exception of the intersection at 2nd Street where a 12-foot wide left turn lane has been provided for northbound traffic, Baker Avenue has a two-lane configuration. The street is typically 44-feet wide (between curb faces) with two 12-foot wide travel lanes and two 10-foot wide parking lanes. A wide sidewalk immediately behind the curb has been installed along Baker Avenue between 2nd and 3rd Streets. Parking has been eliminated for a short distance on both sides of Baker Avenue south of 2nd Street to accommodate a 12-foot wide left turn lane. The north approach to the Baker Avenue and 2nd Street intersection has been configured with a 12-foot wide through-right lane for southbound traffic, a 12-foot wide left turn lane for southbound traffic, and a 12-foot wide through lane for northbound traffic. A 7.4-foot wide shoulder marked to prohibit parking exists along the west side of the street on the north approach and a 9-foot wide parking lane exists along the east side of the street.

## BAKER AVENUE (SOUTH OF 2ND STREET)

*Looking north along Baker Avenue from south of 2nd Street*

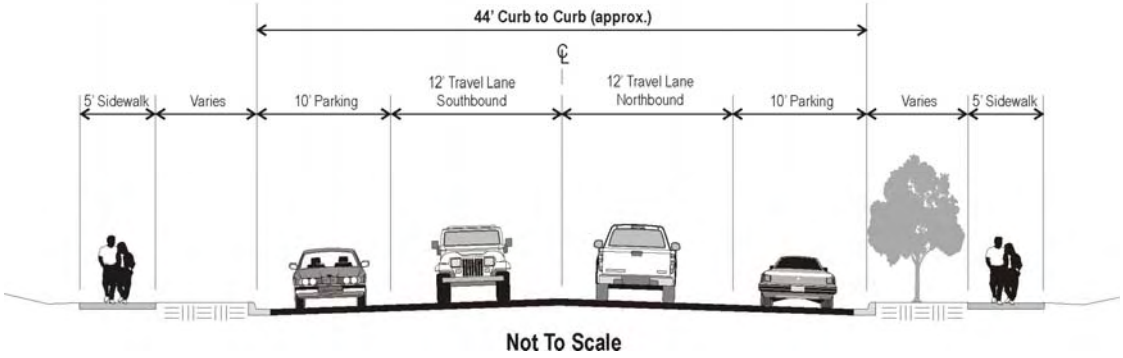
Between 3rd Street and the Whitefish River, the roadway is 44 feet wide with two 12-foot-wide driving lanes and 10-foot wide parking lanes. Landscaped buffer areas and sidewalks parallel Baker Avenue between 3rd Street and the Whitefish River. **Figure 1-5** illustrates the typical configuration of this section of Baker Avenue.

## BAKER AVENUE (3RD STREET TO WHITEFISH RIVER)



*Looking north on Baker Avenue near 4th Street*

**FIGURE 1-5: Typical Section-Baker Avenue (3rd Street to Whitefish River)**



## BAKER AVENUE (WHITEFISH RIVER TO 7TH STREET)

Baker Avenue narrows considerably at the bridge over the Whitefish River. Information from MDT's Bridge Management System shows the roadway on the existing bridge is only 29 feet wide. Sidewalks have been provided along both sides of the bridge to accommodate pedestrian travel and a barrier rail separates the sidewalk from the roadway. South of the bridge to 7th Street, Baker Avenue resumes a 44-foot-wide typical width but the configuration of the roadway changes. This portion of Baker Avenue has a 14-foot travel lane for southbound traffic, a 12-foot travel lane for northbound traffic, a 4-foot wide bike lane and 10-foot wide parking pullout along the east side of the street. A landscaped buffer and 5-foot wide sidewalk exists along the west side of the road and a 5-foot wide sidewalk exists immediately behind the curb on the east side of Baker in this area.

A typical section for this portion of Baker Avenue is shown in **Figure 1-6**.

*Looking north on Baker Avenue at Whitefish River*

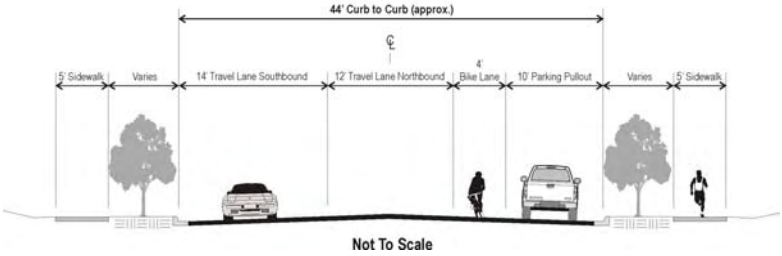
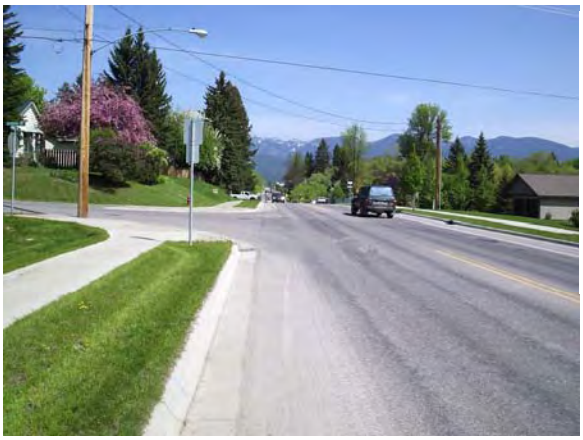



**FIGURE 1-6: Typical Section-Baker Avenue (Whitefish River to 7th Street)**

## BAKER AVENUE (7TH TO 10TH STREET)

Between 7th Street and 10th Street, Baker Avenue is about 32 feet wide (between the curb faces) with two 12-foot wide travel lanes and 4-foot wide shoulders along both sides of the roadway. Landscaped buffers and 5-foot wide sidewalks exist along both sides of the street. On-street parking is prohibited along this section of Baker Avenue. This typical section is illustrated in **Figure 1-7**.



*Looking north on Baker Avenue near 7th Street*

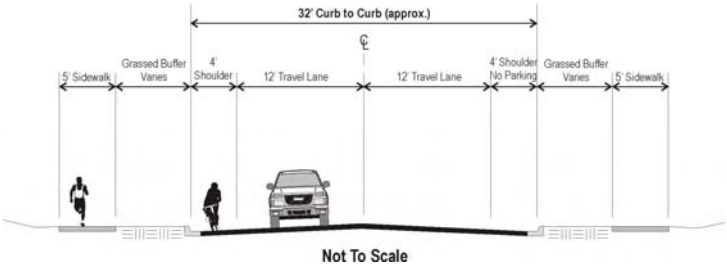
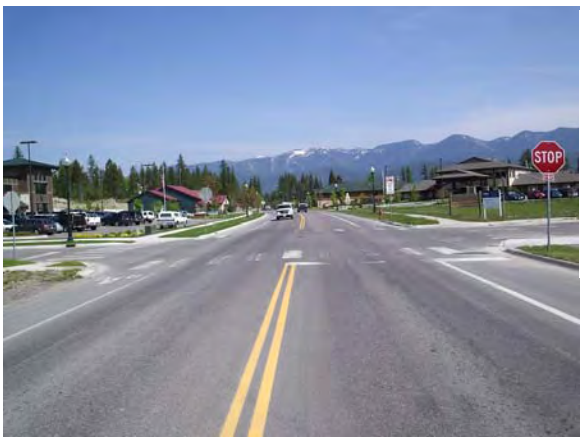



**FIGURE 1-7: Typical Section-Baker Avenue (7th Street to 10th Street)**

### BAKER AVENUE (10TH TO 13TH STREET)

Between 10th Street and 13th Street, Baker Avenue is about 38 feet wide (between the curb faces) with two 12-foot wide travel lanes and 7-foot wide bike lanes along both sides of the roadway. Landscaped (grass) boulevards and 5-foot wide sidewalks exist along both sides of the street. On-street parking is prohibited along this section of Baker Avenue. **Figure 1-8** shows Baker Avenue's configuration in this area.




*Looking north on Baker Avenue at 13th Street*

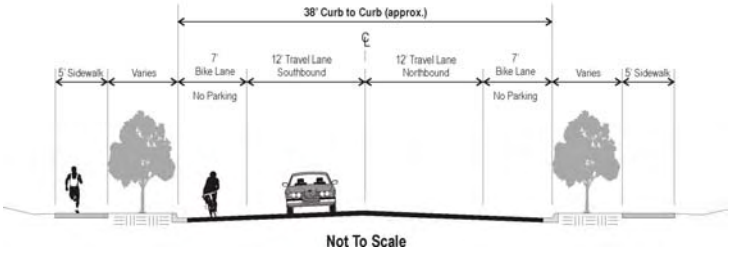



**FIGURE 1-8: Typical Section-Baker Avenue (10th Street to 13th Street)**

## 1.3.3 Posted Speeds

According to Section 6-1-5 Paragraph C.3 of the Whitefish City Code, the speed limit on all through streets and arterial highways is typically 35 miles per hour. However, this speed limit has been adjusted for US 93 through the city center. A speed limit of 25 miles per hour has been established for Spokane Avenue between 2nd Street and the south bank of the Whitefish River and on 2nd Street between Spokane Avenue and a point 100 feet west of the Whitefish River.

The posted speed limit on Baker Avenue is typically 25 miles per hour.

There are no designated school zones on US 93 or on Baker Avenue. However, a designated school zone with a 15 mph speed limit exists on 2nd Street adjacent to Central School (located east of Spokane Avenue).

### 1.3.4 Intersections/Roadway Geometry

Side streets joining Spokane Avenue, 2nd Street, and Baker Avenue within the corridor are typically perpendicular to the major roadways and form standard three-legged ("T") intersections or four-legged intersections. Riverside Avenue, located just north of the Whitefish River, joins Spokane Avenue in a skewed configuration.

Spokane Avenue and 2nd Street are located in level terrain and these streets have only minor variations in vertical alignment. A slight grade exists on Baker Avenue south of 3rd Street as the elevation of the roadway falls toward the Whitefish River. The gently rolling to level terrain along Baker Avenue between the Whitefish River and 13th Street West has resulted in minor variations in the vertical alignment of the roadway.

### 1.3.5 Traffic Controls and Turning Lanes

Currently, there are eight signalized intersections in the Whitefish area and four of the signals are located within the Whitefish Urban corridor at the following locations:

- Spokane Avenue and 13th Street
- Spokane Avenue and 2nd Street
- 2nd Street/Central Avenue
- 2nd Street/Baker Avenue

All of these traffic signals are owned and operated by MDT and are pre-timed—meaning they operate with fixed cycle lengths and assign rights-of-way to traffic movements according to a predetermined timing schedule for all or parts of the day. Pre-timed signals do not adjust to traffic flows and their operation sometimes leads to congestion if unusual traffic patterns develop or if there are major fluctuations in traffic demand on various approaches.

Other roads adjoining Spokane Avenue and Baker Avenue are controlled by stop signs. All-way stop control exists at the intersection of Baker Avenue and 13th Street. However, the City of Whitefish has identified this intersection as a likely location for a future traffic signal.

Few dedicated left or right turn lanes exist on Spokane Avenue, 2nd Street, and Baker Avenue within the corridor. The intersection of Spokane Avenue and 13th Street was reconstructed and improved to include designated left turn lanes on all four approaches.

A left turn lane exists on the east approach and a right turn lane has been installed on the north approach at the intersection of Spokane Avenue and 2nd Street. There are no other dedicated left or right turn lanes on 2nd Street within the corridor.

The intersection of Baker Avenue and 2nd Street has been modified to include a left turn lane and a shared through-right turn lane on the north approach.

### 1.3.6 Right-of-Way

The majority of the right-of-way for Spokane Avenue, 2nd Street, and Baker Avenue is 70 feet wide. The right-of-way corridor for Spokane Avenue south of 13th Street was expanded to accommodate road widening during previous reconstruction on US 93. In the vicinity of 13th Street, the right-of-way for Spokane Avenue ranges in width from 185 feet to 235 feet.

### 1.3.7 Bridges

There are no bridges on Spokane Avenue or 2nd Street within the Whitefish Urban study area corridor. Spokane Avenue crosses the Whitefish River between 13th Street and Riverside Avenue; however, this road crossing is accommodated in three large-diameter culverts. Bridges over the Whitefish River exist on 2nd Street west of the downtown area (in MDT's Whitefish-West project area) and on Baker Avenue between 5th and 6th Streets. The bridge on Baker Avenue (constructed in 1977) is a single span structure of about 100 feet in length and accommodates a 29 foot-wide roadway.

### 1.3.8 Corridor Street Lighting

Overhead street lighting exists along both Spokane Avenue and 2nd Street. Ornamental lighting fixtures have been added along the west side of Spokane Avenue between 4th and 3rd Streets. Ornamental lighting fixtures exist along Baker Avenue between the Whitefish River and 13th Street.

### 1.3.9 Corridor Utilities

**Water and Sewer Infrastructure.** City of Whitefish water and sewer infrastructure is extensive within the corridor study area. Municipal water and/or sewer lines exist beneath portions of Spokane Avenue, 2nd Street and Baker Avenue and cross these streets at numerous locations. Reconstruction along the existing US 93 corridor or Baker Street could conflict with municipal water or sewer lines at the following locations:

**Spokane Avenue**

- 6″ diameter water line (from south of 13th Street to Riverside Avenue)
- 8″/12″ diameter water line (from south of 13th Street to Riverside Avenue)
- 6″ diameter water line (from Riverside Avenue to 7th Street)
- 6″ diameter water line (from 7th Street to 2nd Street)
- 27″ diameter sewer outfall (parallels Spokane Avenue at 7th Street and crosses Spokane south of Riverside Avenue)
- Sewer line crossings at 13th Street, 5th Street, and between 3rd and 4th Streets

**2nd Street**

- 10″/12″ diameter water line (from Spokane Avenue to Lupfer Avenue)
- Sewer line crossings between Spokane and Central Avenues, between Central and Baker avenues, and at Lupfer Avenue

**Baker Avenue**

- 12″ diameter water line (from Spokane Avenue south of 13th Street)
- 27″ diameter sewer outfall crossing between 5th Street and Whitefish River
- 8″ diameter sewer line (from just south of Whitefish River to north of 10th Street)
- 8″ diameter sewer line (from 10th Street to south of 13th Street)
- Sewer line crossings at 4th Street, just south of Whitefish River, and at 13th Street

It is also likely that individual water or sewer service lines at numerous locations could be affected by highway reconstruction activities.

The City of Whitefish's *Capital Improvement Plan 2007/08 – 2011/12* has identified the need for upgrades to the gravity sewer system on Spokane Avenue north of 13th Street and on 2nd Street west of Spokane Avenue. The City could upgrade the sewer lines in conjunction with future improvements to US 93.

**Storm Drainage Facilities.** Curbs and gutters and storm drainage facilities exist along Spokane Avenue, 2nd Street, and Baker Avenue.

**Other Utilities.** Overhead power lines, overhead and underground telephone cables and fiber optic lines, and underground natural gas distribution lines cross or exist adjacent to the Spokane Avenue, 2nd Street and Baker Avenue. Some of these utilities may be in conflict with future improvements to the US 93 corridor.

### 1.3.10 Approaches and Access Control

Commercial properties located adjacent to Spokane Avenue between 13th and 6th Streets are typically served by one or two approaches. Newer commercial developments, such as several motels located along the west side of Spokane Avenue, are typically served by only one access point. Multiple or wide driveway approaches are found at business locations along the east side of Spokane between Riverside Avenue and 8th Street.

In general, the narrow lot configuration in the established residential neighborhood along Spokane between 6th and 2nd Streets is not conducive to individual driveway approaches. With only a few exceptions, property access is generally from alleys or side streets only in this area. Commercial uses have evolved on some of the blocks adjoining Spokane Avenue in central Whitefish and driveway approaches have been developed to serve off-street parking lots associated with businesses.

Lot configurations and the presence of on-street parking have limited the number of driveway approaches along 2nd Street between Spokane and Baker Avenues.

Access is currently unrestricted along Spokane Avenue, 2nd Street, or Baker Avenue within the area under evaluation for this study. MDT has a System Impact Action Process (SIAP) in place to review and evaluate the potential impacts of non-MDT initiated projects that may substantially and permanently affect the use, capacity, and safety of state-maintained highways. This review process allows MDT to coordinate between local land use agencies, private developers, and/or other governmental agencies when considering requests for access to the state transportation system.

## 1.4 Current Traffic Operations

Traffic operations are variable within the corridor study area. US 93 south of 13th Street is a suburban arterial with a 45 mile per hour speed limit. This section of US 93 was rebuilt in accordance to the ROD for the US Highway 93 Somers to Whitefish West EIS and includes four travel lanes, medians, turn lanes, improved signalization and restructured access to the highway.

North of 13th Street, US 93 serves older highway commercial areas, traditional residential neighborhoods, and the city's central business district. As expected, these two-lane streets have a different character and operating conditions than US 93 south of 13th Street.

Baker Avenue fulfills several functions between 2nd Street and 13th Street. Baker Avenue serves the downtown core area between 2nd Street and 5th Street, city parks and residential areas between 5th and 10th Streets, and a developing area with new commercial and office uses along 13th Street.

Information about existing traffic conditions on Spokane Avenue, 2nd Street, and Baker Avenue follows including a discussion of current traffic volumes, the level of service (LOS) associated with these traffic volumes, and other operating characteristics.

### 1.4.1 Current Traffic Volumes on US 93

Traffic has been continuously monitored by MDT at several permanent count locations within the Flathead Valley since the early 1980s. However, the nearest automatic traffic recorders are on US 2 near Kalispell (ATR Station A-24) and on US 2 east of Columbia Falls (ATR Station A-60). Station A-24 is representative of urban traffic on a Principal Arterial roadway similar to US 93. Although the counter does not represent traffic conditions within Whitefish, they do provide an indication of long term traffic growth trends in the Flathead Valley.

Historical traffic count data from MDT's *Montana's Automatic Traffic Recorders 2007* shows an increase in the annual average daily traffic (AADT) at the recording site of more than 60% over the 1991 to 2007 period and an increase in AADT volumes of about 25% between 2000 and 2007. Data for 2008 shows the AADT at this count station was about 7% lower than the 2007 AADT for this count station. However, the long-term AADT data shows

traffic volumes at this Flathead Valley location have increased by 3 to 4% per year over most of the last two decades.

MDT's annual "Traffic by Section" publications do provide a long term record of traffic volumes on US 93 in the Whitefish area. The AADT data provided in the publications were developed from short-term periodic traffic counts conducted by MDT. Data collected over the 2000 to 2007 period shows traffic volumes on US 93 have increased by nearly 6% on US 93 south of 13th Street, held steady or shown minor increases through the downtown area of Whitefish, and increased by more than 4% on US 93 between Baker and Karrow Avenues.

Traffic volumes on US 93 and other corridor roadways have steadily increased over the last decade. Recent (2007 and 2008) AADT volumes on corridor roadways are shown below:

- US 93 (south of 13th Street) – 18,000 to 22,000 vehicles
- Spokane Avenue (between 2nd and 13th Streets) – 8,000 to 15,000 vehicles
- 2nd Street (between Spokane and Baker Avenues) – 8,000 to 10,000 vehicles
- Baker Avenue (between 2nd and 13th Streets) – 9,000 to 13,000 vehicles

A traffic model was developed for the Whitefish Transportation Plan to represent current and future travel based on existing and anticipated housing and employment within the community. With the model, it was possible to estimate daily traffic volumes on all major roads and illustrate the distribution of traffic on the road system in the Whitefish area. **Figure 1-9** shows current (2003) daily traffic volumes on US 93 and other major streets within the corridor study area as determined by the traffic model. It should be noted that the modeled volumes are representative of current facility use but they may not match actual traffic volume data on the roadways.

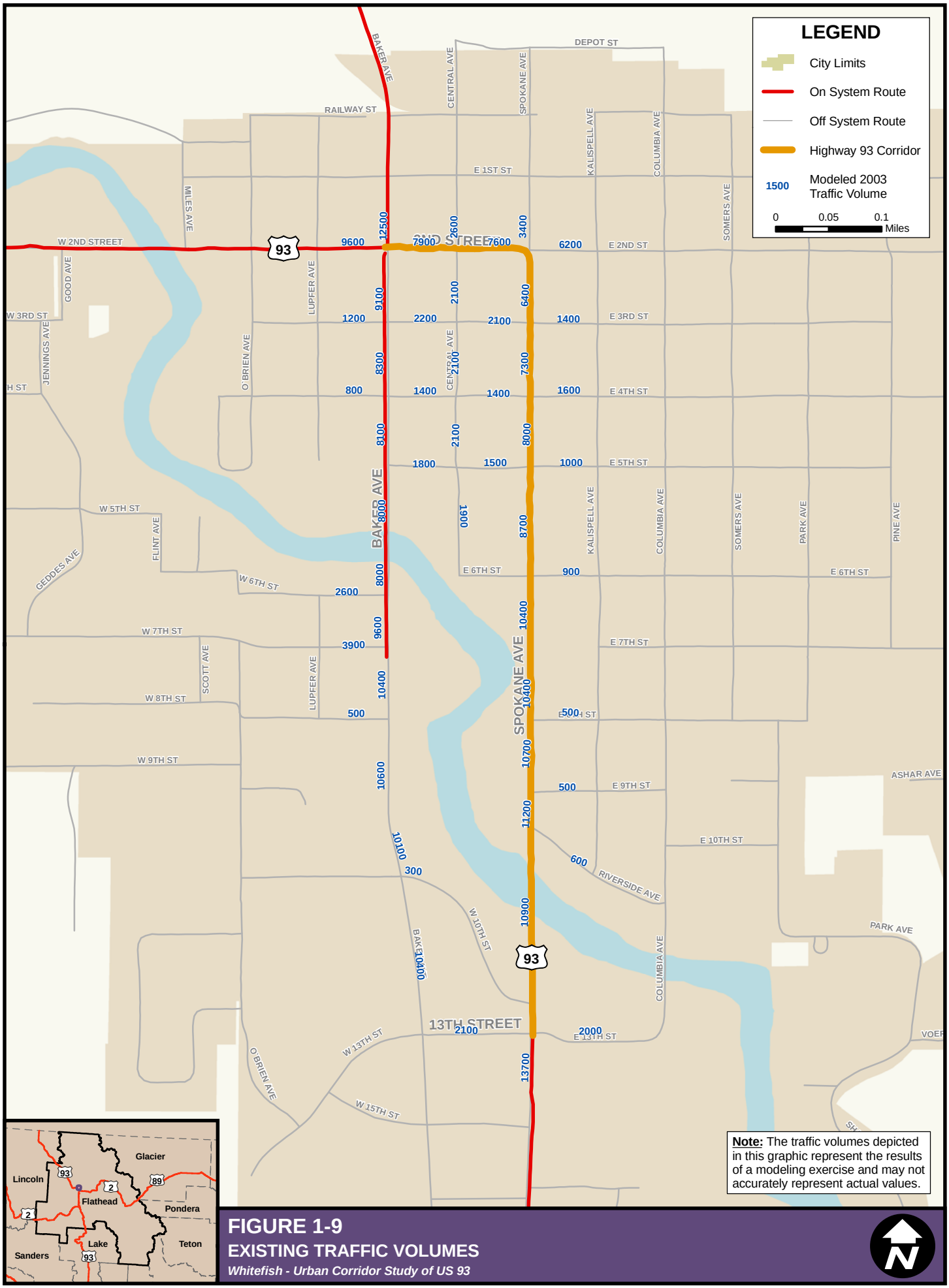



**FIGURE 1-9**

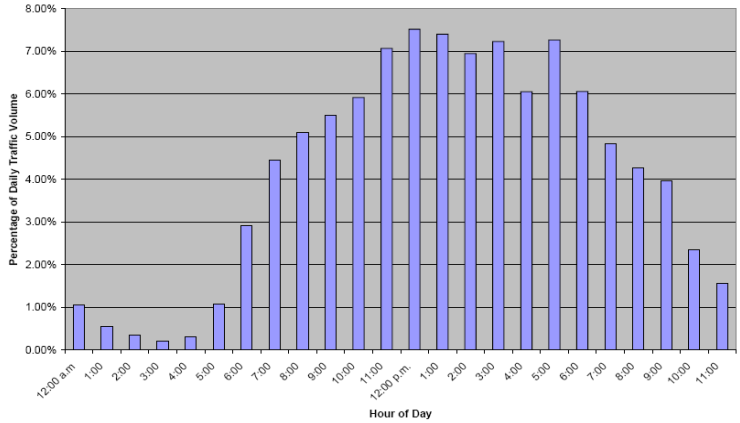
**EXISTING TRAFFIC VOLUMES**

*Whitefish - Urban Corridor Study of US 93*

### 1.4.2 Hourly Variations in Traffic on the US 93 Corridor

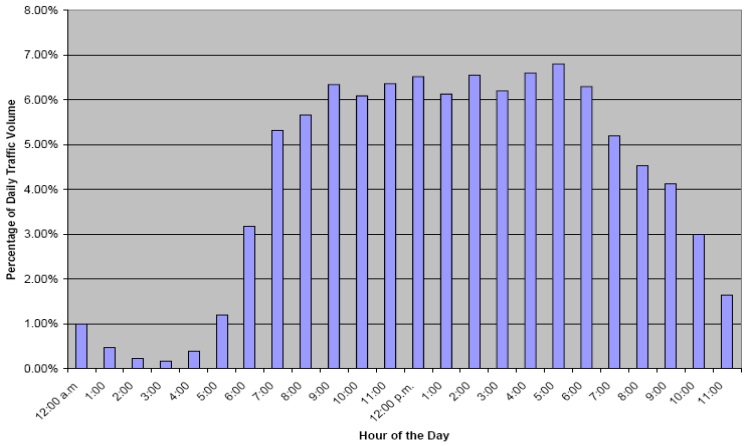
The lack of a continuously recording traffic counter on the US 93 corridor in Whitefish means that trends in traffic must be identified based on short-term counts at spot locations. Traffic volume data collected during August 2003 at two intersections on the US 93 corridor was reviewed to identify trends in hourly traffic variations in Whitefish. Hourly traffic volumes (expressed as a percentage of the total daily volume) at each intersection is presented below in **Figure 1-10**.

## Figure 1-10: Hourly Variations in Traffic Volumes within the Corridor




**Spokane Avenue/13th Street**

Data collected by WGM Group, Inc. in August 2003




**2nd Street/Baker Avenue**

Data collected by WGM Group, Inc. in August 2003

The traffic volume data for Spokane Avenue and 13th Street shows a peak travel period occurring between 11:00 a.m. to 6:00 p.m. with traffic volumes during each hour typically exceeding 7% of the total daily traffic at the intersection during this 7-hour long period. Data for the 2nd Street and Baker Avenue intersection shows a much longer sustained peak travel period—extending from 9:00 a.m. to 7:00 p.m. Traffic volumes during each hour of this 10-hour long period exceeded 6% of the total daily traffic at the intersection.

Intersection turning movement counts conducted along Spokane Avenue, 2nd Street, and Baker Avenue during 2007 showed that morning (AM) peak hours typically began

between 7:30 and 8:00 a.m. and afternoon (PM) peak hours typically began between 4:30 and 5:00 p.m.

### 1.4.3 Seasonal Variations in Traffic

The lack of a permanent traffic counter and relevant previous traffic counts within Whitefish (and particularly the corridor study area) makes quantifying seasonal variations in traffic volumes difficult. However, it is recognized that seasonal variations in traffic do occur in the community.

MDT's automatic traffic recorders—ATR Station A-24 near Kalispell and ATR Station A-60 east of Columbia Falls—provide a general indication of seasonal variations in traffic in the Flathead Valley.

Data for 2008 from these stations show that traffic volumes are typically highest from May through September and traffic volumes during peak months (July and August) may be significantly higher than the AADT for the year. During 2008, ATR Station A-24 showed traffic volumes during July (the peak month) that were 13% above the AADT for this station. Due to the recreational traffic on US 2, ATR Station A-60 showed July traffic volumes that were 85% higher than the AADT for the station. As expected, travel was lowest during the winter months at both these stations. In 2008, traffic volumes at the ATR Station near Kalispell during January were about 87% of the AADT. January 2008 traffic volumes were only about 56% of the AADT at ATR Station east of Columbia Falls.

### 1.4.4 Vehicle Classifications/Trucks

Comments heard during the development of this corridor study indicate trucks on US 93 affect traffic operations and safety along the route and conflict with local desires for the redevelopment of downtown Whitefish.

MDT's Road Design Manual defines a truck as "a heavy vehicle engaged primarily in the transport of goods and materials, or in the delivery of services other than public transportation. For geometric design and capacity analyses, trucks are defined as vehicles with six or more tires." MDT's vehicle classification standards also categorize commercial vehicles by types as either Small Trucks or Large Trucks. Small Trucks are single-unit vehicles (Type 5, 6, or 7 Vehicles) with two to six axles. MDT's vehicle classification standards identify Large Trucks (Type 8 through 13 Vehicles) as tractor-trailer combinations with various numbers of axles.

WGM Group completed a series of manual counts and quantified truck traffic at 13 intersections along Spokane Avenue, 2nd Street, and Baker Avenue during August 2003. For the purposes of these counts, vehicles the size of a typical UPS delivery vehicle and larger were identified as "trucks" during WGM's counts. A typical UPS delivery vehicle is a 2-axle single-unit vehicle with six tires and is a Type 5 Commercial Vehicle within the Small Truck category according to MDT's standards. While WGM's data does not provide information on each type of vehicle associated with MDT's Small Truck and

Large Truck categories, the data is indicative of the overall amount of commercial vehicle traffic on US 93 at the time of the counts.

WGM's counts yielded data on the percentage of trucks observed during the AM peak hour (typically between 7:00 and 9:00 AM) and PM peak hour (typically between 4:00 and 6:00 PM) at each intersection. The percentages of trucks present during peak hour traffic were examined at four representative intersections in the corridor study area including Spokane Avenue and 13th Street, Spokane Avenue and 2nd Street, 2nd Street and Baker Avenue, and Baker Avenue and 5th Street. The results of these truck counts are provided in **Table 1-1**. As the table shows, trucks comprised between 7.7% and 9.4% of all vehicles counted at key intersections along the US 93 corridor during the AM peak hour and between 2.4% and 4.1% of all vehicles counted during the PM peak hour.

It should be noted that these truck counts were taken during a time when construction and development in the Whitefish area was at or near peak levels. These percentages may not accurately reflect current conditions due to the slowdown in development that has and is occurring in the area.

## Table 1-1: Truck Percentages at Selected Intersections in the Corridor

| Location | AM Peak Hour | PM Peak Hour |
|---|---|---|
| **Spokane Avenue/13th Street** | | |
| Peak Hour Volume | 936 | 1443 |
| Number of Trucks | 82 | 52 |
| % Trucks in Peak Hour | **8.8%** | **3.6%** |
| **Spokane Avenue/2nd Street** | | |
| Peak Hour Volume | 668 | 1145 |
| Number of Trucks | 63 | 47 |
| % Trucks in Peak Hour | **9.4%** | **4.1%** |
| **2nd Street/Baker Avenue** | | |
| Peak Hour Volume | 1300 | 1779 |
| Number of Trucks | 100 | 43 |
| % Trucks in Peak Hour | **7.7%** | **2.4%** |
| **Baker Avenue/5th Street** | | |
| Peak Hour Volume | 732 | 1087 |
| Number of Trucks | 31 | 20 |
| % Trucks in Peak Hour | **4.2%** | **1.8%** |

Source: WGM Group, Inc. traffic counts during August 2003. Vehicles the size of a typical UPS delivery vehicle and larger were identified as "trucks" during WGM's traffic counts.

The presence of trucks occasionally inhibits traffic flows on US 93 and affects traffic operations at signalized intersections in the downtown area. At various times during the

day, it is not uncommon for just a few large commercial vehicles waiting at traffic signals to consume much of the available queuing space for vehicles on 2nd Street between Spokane and Baker Avenues.

### 1.4.5 Existing Intersection Levels of Service

Urban road systems are ultimately controlled by the operation of their major intersections. Poor operating conditions reduce the number of vehicles that can pass through intersections during peak travel hours and limit a roadway corridor's overall ability to accommodate traffic each day. The Level of Service (LOS) is often used as an indicator of the operating conditions at intersections.

Level of Service (LOS) is a performance measure developed by the transportation profession to account for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles. It provides a "report card" type rating scale corresponding to the operation of the intersection and how it accommodates the amount of traffic using it. LOS A, B, and C represent conditions where traffic moves without significant delays during peak travel hours. Level of Service D and E suggest deteriorating operating conditions and increased delays. Level of Service F represents conditions where significant vehicle delays and congestion occur.

Traffic engineers conduct LOS analyses for both signalized and unsignalized intersections. At signalized intersections, the LOS rating is based on the average delay of all movements. At side-street stop-controlled intersections, the LOS rating is based on the average delay of the worst movement; typically a left turn from the stop-controlled street. For this reason, even though the traffic on the major street (such as Spokane or Baker Avenues) may not be delayed, the intersection may be assigned a poor LOS because entering or crossing traffic from the side streets experience lengthy delays. For all-way stop-controlled intersections (like the intersection of Baker Avenue and 13th Street), the LOS rating is based on the average delay experienced on all movements. Intersections with short average delays have a high LOS; conversely, intersections with long average delays have a low LOS.

LOS characteristics are different for signalized and unsignalized intersections. Drivers anticipate longer delays at signalized intersections that carry large amounts of traffic and generally expect unsignalized intersections to have less delay. Additionally, several driver behavior considerations combine to make delays at unsignalized intersections less desirable than at signalized intersections. For example, drivers at signalized intersections are able to relax during the red phase, whereas drivers on the minor approaches at an unsignalized intersection must remain attentive to identify acceptable gaps and make their desired traffic movement.

**Applicable MDT Operating Standards.** MDT's Traffic Engineering Manual indicates the highway mainline or intersections should be designed to accommodate a selected design hourly volume at a specified LOS. MDT's operational standards for urban roadways and intersections are shown below in **Table 1-2**. These operating standards

apply to US 93 within the corridor study area and to the portion of Baker Avenue on the state highway system.

MDT's operating standards only specify a minimum or desirable LOS based on various typical roadway lane configurations (2-lane, 4-lane, and multi-lane facilities with or without curbs) and design speeds. Note that design speed is a selected speed used to determine the various geometric design features of the roadway and does not mean the same as operating speed or the posted speed. The desirable and minimum LOS represents anticipated operations under design year traffic volumes—typically 20 years into the future. MDT generally strives to provide arterial roadways that operate at LOS C or higher in the design year.

## Table 1-2: MDT Operational Standards for Urban Roadways and Intersections

| **Urban Principal Arterials** (NHS-Non-Interstate) **Spokane Avenue/2nd Street** | **2-Lane** | | **4-Lane** | |
|---|---|---|---|---|
| | Curbed | Uncurbed | Curbed | Uncurbed |
| Design Speed | 40-45 mph | 40-50 mph | 40-45 mph | 40-55 mph |
| Design Year Level of Service* | Desirable: **B** Minimum: **C** | | Desirable: **B** Minimum: **C** | |
| **Urban Minor Arterials** (Non NHS) **Baker Avenue** | **2-Lane** | | **Multi-lane** | |
| | Curbed | Uncurbed | Curbed | Uncurbed |
| Design Speed | 35 mph | 35 mph | 35 mph | 35 mph |
| Design Year Level of Service* | Desirable: **B** Minimum: **C** | | Desirable: **B** Minimum: **C** | |
| **Urban Collectors** (Non NHS) | Curbed | | Uncurbed | |
| Design Speed | 30 mph | | 30 mph | |
| Design Year Level of Service* | Desirable: **C** Minimum: **D** | | | |

Source: Montana Department of Transportation, Road Design Manual, Chapter Twelve-Geometric Design Tables, Figures 12-7, 12-8 and 12-9, December 2004.

**Applicable City of Whitefish Operating Standards.** The Whitefish City-County Growth Policy includes a goal under its Transportation element indicating a local desire to "provide an efficient and effective transportation system to serve the present and future needs of the Whitefish area." However, the City has not developed policies that specify desirable or minimum LOS standards for road development.

**Current Levels of Service at Corridor Intersections.** During the spring and summer of 2007, signalized intersections and high-volume unsignalized intersections on US 93 and Baker Avenue were counted to generate traffic data for LOS analyses. Each intersection was counted from 7:00 to 9:00 AM and from 4:00 to 6:00 PM in an effort to capture morning and evening peak hour volumes at the intersections. Additionally, peak hour traffic information from previous projects were obtained for two other stop controlled intersections on Baker Avenue and used for the LOS analysis.

Based on the intersection traffic data collected in 2007, the LOS for each of the identified intersections within the corridor was calculated using Highway Capacity Software.

**Table 1-3** shows the AM and PM peak hour LOS for each individual leg of the signalized intersections evaluated based on count information collected in 2007, and an overall LOS for the entire intersection. Individual legs of intersections or intersections that operate at LOS D or below are highlighted in **Table 1-3**. LOS D or lower is indicative of intersections where geometric changes or operational improvements may be warranted.

The LOS analyses suggest that the intersections of Spokane Avenue and 2nd Street and 2nd Street and Baker Avenue currently operate at LOS F and LOS E, respectively during the PM peak hour. These intersections also have individual legs that operate a LOS D during the AM peak hour. The analyses showed the southbound leg of the intersection of 13th Street and Spokane Avenue operates poorly during the PM peak hour.

## Table 1-3: Peak Hour LOS for Signalized Intersections in the Corridor

| 2007 AM Peak LOS | | | | | |
|---|---|---|---|---|---|
| **Intersection** | **EB** | **WB** | **NB** | **SB** | **Overall** |
| **Spokane Avenue & 13th Street** | C | C | B | C | C |
| **Spokane Avenue & 2nd Street** | B | B | D | B | C |
| **Central Avenue & 2nd Street** | B | C | A | A | B |
| **Baker Avenue & 2nd Street** | D | C | A | B | C |
| **2007 PM Peak LOS** | | | | | |
| **Intersection** | **EB** | **WB** | **NB** | **SB** | **Overall** |
| **Spokane Avenue & 13th Street** | C | C | B | D | C |
| **Spokane Avenue & 2nd Street** | B | B | F | C | F |
| **Central Avenue & 2nd Street** | C | C | A | A | C |
| **Baker Avenue & 2nd Street** | F | D | B | B | E |

**Table 1-4** presents the results of the LOS analyses for unsignalized (stop-controlled) intersections along the US 93 corridor and Baker Avenue where traffic data was collected in 2007. Please note that turning movement counts were not performed at every intersection along Spokane Avenue or Baker Avenue during 2007, so LOS analyses were not performed for all unsignalized intersections along these roadways.

The table shows two stop-controlled intersections—Spokane Avenue and 5th Street and Baker Avenue and 4th Street—currently operate at LOS D during the PM peak hour based on the 2007 traffic count data. The poor overall peak hour LOS shown at these unsignalized intersections is the result of at least one of the movements at each intersection operating with significant vehicle delays and does not necessarily mean that the operations of the entire intersection are poor. Analyses suggest the major roadways (Spokane and Baker Avenues) generally operate at an acceptable LOS during the peak hour.

## Table 1-4: Peak Hour LOS for Unsignalized Intersections on US 93 and Baker Avenue

| 2007 LOS (Stop-Controlled Intersections) | | | | | |
|---|---|---|---|---|---|
| Intersection | AM | PM | Intersection | AM | PM |
| Spokane Avenue & 1st Street | A | A | Baker Avenue & 4th Street | B | D |
| Spokane Avenue & 4th Street | C | C | Baker Avenue & 5th Street | B | C |
| Spokane Avenue & 5th Street | C | D | Baker Avenue & 7th Street | B | C |
| | | | Baker Avenue & 10th Street* | B | B |
| | | | Baker Avenue & 13th Street* | B | C |

* intersection not counted by RPA

### 1.4.6 Corridor Capacity

Assessing the capacity of a road segments within a corridor can provide important information about the ability of existing facilities to accommodate present and future traffic volumes. The capacity of a road is a function of a number of factors including:

- the operation intersections along the corridor;
- adjacent land uses;
- side approaches and intersection spacing;
- road alignment and grade;
- speed;
- turning movements;
- the types of vehicles using the road; and
- the planning and maintenance devoted to the associated street network.

As traffic volumes increase, vehicle flows deteriorate and delays increase. When traffic volumes approach and exceed the available capacity, roadway operations begin to fail and service levels drop.

The number of lanes on the roadway may be indicative of its available capacity. In general, two-lane roads can accommodate up to 12,000 vehicles per day, three-lane roads can carry between 12,000 and 18,000 vehicles per day, and four-lane roads can handle between 18,000 and 24,000 vehicles per day. Five lanes or more are typically required for volumes over 24,000 vehicles per day.

The Volume to Capacity (v/c) ratio is a statistic that can indicate whether a roadway segment has an adequate numbers of travel lanes for the traffic volumes using the facility. If traffic volumes exceed capacity, congestion will occur and facility users experience increased vehicle delays and a decreased LOS. High v/c ratios are indicative of roadway segments unable to adequately accommodate traffic flows and poor operating conditions. Roadways with v/c ratios of 0.8 may operate at or near capacity and at a poor LOS (LOS D and LOS E). Ratios of 1.0 or more suggest the road may be over capacity and operating at LOS F.

The travel demand model developed for the Whitefish Transportation Plan provides traffic volume data that can be used together with information about existing lane configurations to identify corridor locations with capacity concerns. Through this analysis, the following roadway sections may be approaching capacity or over capacity and operating at a poor LOS during peak hours:

- Spokane Avenue between Riverside Avenue and 1st Street,
- 2nd Street west of Baker Avenue,
- Baker Avenue north of 2nd Street, and
- Baker Avenue between 6th and 13th Streets.

## 1.5 Safety Analysis

### 1.5.1 Recent Crash Data for the Corridor

Crash data for a three-year time period from October 1, 2003 to September 30, 2006 was obtained from the MDT Traffic and Safety Bureau to identify areas of traffic safety concern and help assess the overall safety performance of the US 93 corridor and adjoining streets. Over the three-year period examined, 84 crashes were reported along Spokane Avenue and 2nd Street between 13th Street and Baker Avenue and 24 crashes occurred along Baker Avenue between 2nd Avenue and 13th Street. An analysis of the crash data for the three-year period revealed the following information:

- No fatalities occurred as a result of the crashes along the US 93 corridor or on Baker Avenue; however, 20 of the reported crashes along Spokane Avenue and 2nd Street and 8 of the crashes along Baker Avenue resulted in injuries or possible injuries.

- Nearly 90% of the reported crashes involved two or more vehicles with the most common crashes being rear-end collisions (51%), right-turn/angle collisions (22%), sideswipe collisions (8%) and left turn collisions (8%).

- About one-fourth of the crashes recorded on Spokane Avenue and 2nd Street during the three-year period occurred during hours of darkness or low light conditions. About 29% of the reported collisions on Baker Avenue during the study period occurred at dawn, dusk or at night.

- About one-fourth of the crashes along the US 93 corridor and on Baker Avenue occurred on wet, icy, or snowy road surfaces.

- Almost 87% of the reported crashes on Spokane Avenue and 2nd Street were attributed to intersections along the corridor. Six intersections had 5 or more reported crashes during the study period including:

    - Spokane Avenue and 13th Street (17 crashes);
    - Spokane Avenue and 4th Street (8 crashes);

- Spokane Avenue and 3rd Street (7 crashes);
- Spokane Avenue and 2nd Street (11 crashes);
- 2nd Street and Central Avenue (5 crashes); and
- 2nd Street and Baker Avenue (14 crashes).

- Fifteen (15) of the 24 crashes on Baker Avenue between 2nd and 13th Streets during the three-year study period occurred at intersections along the corridor. Thirteen (13) crashes were reported at the intersection of Baker Avenue and 13th Street and 3 each occurred at Baker Avenue's intersections with 4th Street and 10th Street.

In an effort to better understand the crash history at intersections along US 93 and on Baker Avenue, additional data for those locations with five or more crashes during the three-year study period were analyzed. This analysis considered crash types, road surface and light conditions, information about the intent of motorists involved in crashes, direction of travel, vehicles involved, and contributing circumstances to each crash. The evaluation of crash types and other contributing factors helps determine the primary causes for the crashes and may be indicative of possible engineering solutions needed to reduce certain crashes.

The predominant crash type at the intersections along the US 93 corridor examined in detail was rear-end collisions followed by right-turn and right angle collisions, left turn collisions, sideswipes, and collisions with fixed objects. Most of these collision types are characteristic of roadways experiencing periods of traffic congestion. Rear-end collisions are often the result of sudden and unexpected slowing or stopping coupled with inadequate following distance. The lengthy queues of vehicles stopped at signalized intersections along Spokane Avenue and 2nd Street are likely contributing factors to rear-end collisions along US 93.

Crashes involving left or right-turning vehicles and right angle collisions are often the result of drivers misjudging the speed and/or distance of oncoming traffic and mistakenly turning in front of or into an oncoming vehicle. Due to the high traffic volumes on US 93 during portions of the day, drivers attempting to enter or cross traffic on Spokane Avenue from side streets may sometimes become impatient and cause conflicts with approaching vehicles.

Sideswipe collisions within the corridor may suggest the need for improved centerline or lane markings. They may also be reflective of a narrow roadway, particularly in areas of the corridor where parking exists along both sides of the street.

The fixed object collisions recorded at the intersections of Spokane Avenue and 2nd Street and 2nd Street and Baker Avenue, suggests the need for geometric modifications to increase turning radii at these intersections for large vehicles.

### 1.5.2 Severity Index Ratings and Crash Rates

Severity index ratings and crash rates were calculated for the intersections along Spokane Avenue, 2nd Street, and Baker Avenue where 3 or more crashes were recorded during the study period. These measures (along with the total number of crashes recorded) can indicate the need for safety improvements by allowing the severity and frequency of crashes at corridor intersections to be compared with other locations.

**Severity Index Ratings.** The severity index rating is a measure used by MDT that considers three categories of severity resulting from crashes—property damage only (PDO), non-incapacitating injuries, and incapacitating injuries or fatalities. MDT developed a weighted formula that considers the total number of crashes by severity type and the total crashes occurring at a location to determine a severity index rating. Crashes resulting in injuries or fatalities are weighted more than crashes resulting in only property damage. A location where all crashes resulted in property damage but no injuries would have a severity index rating of 1.00. Locations where crashes resulted in injuries would have index ratings above 1.00.

The three intersections along US 93 with the highest severity index ratings during the study period were Spokane Avenue and 3rd Street (1.86), Spokane Avenue and 13th Street (1.82), and Spokane Avenue and 4th Street. These severity ratings are not abnormally high or indicative of critical safety concerns when compared to other locations on the state highway system.

The only intersections along Baker Avenue with 3 or more crashes and severity index ratings higher than 1.00 were at Baker Avenue and 3rd Street (3.00) and Baker Avenue and 13th Street (1.33). It should be noted the severity index rating for intersection of Baker Avenue and 3rd Street is the result of only 3 crashes at the location with some level of injuries in each instance. The crash rate does not indicate a high frequency of crashes at this intersection. .

**Intersection Crash Rates.** Crash rates relate the total number of crashes to the total amount of traffic entering the intersection during a given period. Intersection crash rates are expressed in terms of crashes per million entering vehicles (MEV). Crash rates for intersections on US 93 and Baker Avenue were calculated for intersections with five or more crashes using estimates of the total daily traffic entering each intersection during the three-year period.

The estimated crash rates for the selected intersections along US 93 and Baker Avenue during the three-year study period ranged from 0.23 to 0.67 crashes per MEV. These estimated crash rates are not considered high when compared with such rates for intersections in other urban areas of Montana.

# 1.6 Pedestrian and Bicycle Facilities in the Corridor

## 1.6.1 Sidewalks

Sidewalks exist along both sides of Spokane Avenue from 13th Street to 2nd Street and along the majority of 2nd Street from Spokane Avenue westward to the Whitefish River crossing. Sidewalks also parallel both sides of Baker Avenue between Railway Street and 13th Street.

The Guide for the Planning, Design, and Operation of Pedestrian Facilities produced by the American Association of State Highway and Transportation Officials (AASHTO) indicates the minimum unobstructed pedestrian travel way (clear width) for a sidewalk is 4 feet. Sidewalks at least 5 feet wide are needed for wheelchair users to pass one another or turn around. The AASHTO publication also notes that along arterials not within the central business district (CBD), sidewalk clear widths of 6 to 8 feet are recommended where a planting strip is provided between the sidewalk and the curb, and sidewalk clear widths of 8 to 10 feet are desirable where the sidewalk is flush against the curb. In Central Business District areas, AASHTO lists the desirable clear width for sidewalks as 10 feet or sufficiently wide to provide the desired level of service needed to accommodate pedestrian flows.

Sidewalks along US 93 South, Spokane Avenue and Baker Avenue are typically 5 feet wide and meet the AASHTO standard for minimum clear width. The sidewalks along Spokane Avenue between the Whitefish River and 6th Street are located immediately behind the curbs along each side of the street and are not 8 to 10 feet wide as suggested in AASHTO's guidance. Sidewalks in front of businesses along on 2nd Street between Spokane and Baker Avenues are generally 8 to 10 feet wide. Clear widths on the sidewalks along this portion of 2nd Street are reduced in some locations by poles for overhead street lighting and traffic signals, sign posts, planters, and supporting posts for overhead awnings attached to adjacent buildings.

Intersections along the corridor typically include curb ramps for wheelchair accessibility on two or more corners; however, not all intersections include curb ramps with detectable warning surfaces for visually-impaired pedestrians as called for in the "Americans with Disabilities Act Accessibility Guidelines" (ADAAG). Please note that work for this corridor study did not include a detailed evaluation to determine if existing sidewalks comply with <u>all</u> requirements of the ADAAG (grade, cross-slope, obstacles, etc.).

## 1.6.2 Crosswalks

**Table 1-5** identifies pedestrian crosswalk locations along Spokane Avenue, 2nd Street, and Baker Avenue. Crosswalks have been installed on all approaches at the signalized intersections in the corridor and at several other intersections with stop-controlled side approaches. A mid-block crosswalk with curb ramps also exists on Baker Avenue at

Riverside Park. All crosswalk locations are delineated by painted pavement striping with painted stop bars in advance of each crosswalk.

Advance crosswalk warning signs have been installed to alert motorists well ahead of the crosswalks on Spokane Avenue at 4th and 5th Streets and on Baker Avenue at 4th Street. The crosswalk at Spokane Avenue and 4th Street also has overhead flashing lights for all approaches to reinforce that the crossing is used by school children.

Pedestrian push buttons and pedestrian signal (WALK/DON'T WALK) indicators are provided on the poles supporting signal mast arms on all legs of the intersection at Spokane Avenue and 13th Street. Pedestrian pushbuttons (typically installed with pedestrian signals) are electronic buttons used by pedestrians to change traffic signal timing to accommodate street crossings. Vehicle traffic is not delayed if pedestrians are not present to signal the need for crossing.

Pedestrian signal indicators exist at Spokane and 2nd and 2nd and Central, but not at 2nd and Baker.

### Table 1-5: Crosswalks Along the US 93 Corridor and Baker Avenue

| Crosswalk Locations | Relation to Intersection |
|---|---|
| Spokane and 13th Street* | All corners |
| Spokane and 5th Street | North of cross street |
| Spokane and 4th Street | North and south of cross street |
| Spokane and 2nd Street* | All corners |
| 2nd Street and Central Avenue* | All corners |
| 2nd Street and Baker Avenue* | All corners |
| Baker Avenue and 3rd Street | South of cross street |
| Baker Avenue and 4th Street | South of cross street |
| Baker Avenue (South of 5th) | Mid-block at Riverside Park |
| Baker Avenue and 13th Street | All corners |

* Signalized intersection

It was noted that a portable "Pedestrian Crossing" sign placed on the centerline of the roadway is used to reinforce the presence of the crosswalk at Baker Avenue and 3rd Street for approaching motorists. This sign is not used during the winter months due to the need to plow snow from the roadway.

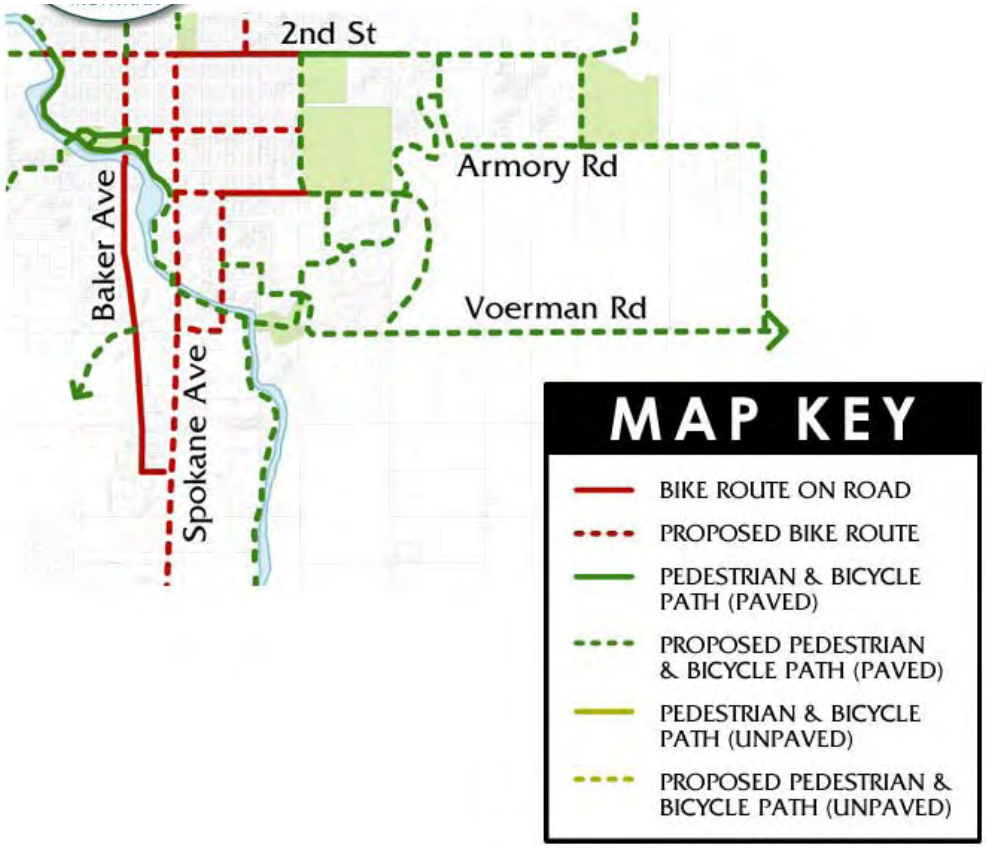
## 1.6.3 Designated Pedestrian and Bicyclist Trails in the Corridor

The City of Whitefish prepared and approved the Whitefish Bicycle and Pedestrian Master Plan which identifies a safe, usable, and functional transportation system for pedestrians and bicyclists within the community. The City has also formed a Pedestrian and Bicycle Path Advisory Committee to help guide the development of a non-

motorized trail network in the community and routinely update the Bicycle and Pedestrian Master Plan. The City's Pedestrian and Bicycle Path Advisory Committee has routinely updated the recommendations in the plan.

According to the City's Bicycle and Pedestrian Master Plan, the US 93 corridor (Spokane Avenue and 2nd Street) is designated as a proposed bike route with links to other designated bicycle routes and paths. Numerous other designated pedestrian or bicyclist trails cross or parallel US 93 and Baker Avenue. Both existing and proposed trails are shown on **Figure 1-11**.

## FIGURE 1-11: Designated Pedestrian and Bicyclist Trails in the Corridor




Source: Fish Trails – Whitefish Montana Accessed at: http://www.fishtrails.info/fish_trails_map.php

### 1.6.4 Proposed Pedestrian and Trail Amenities on US 93

The Whitefish Downtown Business District Master Plan advocates the development of a pedestrian-friendly environment to encourage visitors and residents to utilize downtown businesses. The Plan calls for pedestrian improvements throughout the downtown to support and improve the viability of retail businesses, to improve pedestrian safety along and across 2nd Street, and provide connections to adjacent neighborhoods.

The Plan recommends the development of the "Whitefish Promenade"— an off-street, multi-use recreational trail around the downtown— intended to link adjacent neighborhoods, the city's pedestrian and bike network and parklands along the Whitefish River. A portion of the Whitefish Promenade is proposed along the west side of Spokane Avenue from 7th Street to Railway Street. The Plan also called for a pedestrian-priority streetscape design for 2nd Street between Spokane and Baker Avenues.

### 1.6.5 Pedestrian and Bicyclist Involvement in Corridor Crashes

The incidence of crashes involving pedestrians or bicyclists on US 93 or Baker Avenue within the corridor study area is very low. Data for the period from October 1, 2003 to September 30, 2006 showed only one crash involving a pedestrian—an incident at the intersection of Spokane and 13th Street that resulted in an injury—along the US 93 corridor. This location is the first pedestrian crossing that northbound motorists encounter when traveling into Whitefish from the south.

One crash during the three-year period examined for this study involved a bicyclist and occurred at the intersection of Spokane Avenue and 2nd Street. The bicyclist was traveling east on 2nd Street and was injured after being struck by a turning construction vehicle. Public comments to date have suggested that unreported bicycle-related crashes are not a common occurrence in Whitefish.

## 1.7 Other Transportation Modes

### 1.7.1 Rail Service

Whitefish is located on the main railroad line operated by the BNSF Railway in Montana. Both passenger and freight service are available in the community.

Amtrak, the National Railroad Passenger Corporation, operates across the northern portion of Montana and stops at Whitefish. Amtrak's Empire Builder provides daily passenger service between Chicago and Seattle. Each day, a westbound train departs during the evening (at about 9:00 p.m.) and an eastbound train departs each morning (at about 7:30 a.m.) . Whitefish is a summer and winter tourist destination for rail passengers due to its proximity to Big Mountain and Glacier National Park. Amtrak statistics show Whitefish is the busiest Amtrak station between Minneapolis and Seattle with between 60,000 and 70,000 annual passenger arrivals or departures in recent years. The Amtrak passenger station is located in the historic Whitefish Depot at the north end of Spokane Avenue in downtown Whitefish.

Railroad freight service is also available in Whitefish. The BNSF Railway operates about 60 trains per day through Whitefish, carrying agricultural products and other cargo. According to the *2000 Montana State Rail Plan Update*, the BNSF Railway's Wolf Point-Havre-Shelby-Libby Main Line through Whitefish is considered a major transcontinental

rail freight route. Railroad freight facilities are generally located west of the grade-separated crossing on Wisconsin Avenue.

### 1.7.2 Air Service

Glacier Park International Airport is located 11 miles southeast of Whitefish and accessed from US 93 via Montana Highway 40 and US Highway 2. The airport offers numerous daily flights and is served by Delta , Sky West, Northwest, Horizon, Alaska, and United Airlines and Allegiant Air.

### 1.7.3 Transit Services

Whitefish is served by Rimrock Trail Lines with daily coach service to Missoula. In Missoula, passengers can make connections via other Rimrock buses or transfer to the Greyhound system.

Eagle Transit provides general public transportation service in Flathead County. Eagle Transit, controlled by the Flathead County Area IX Agency on Aging, was initially focused on serving the elderly. In recent years, Eagle Transit has expanded to serve the disabled population and general public within the county. Eagle Transit currently provides a variety of services including Kalispell city bus route, county-wide "door to door" service with scheduled routes in Columbia Falls and Whitefish, and demand-response inter-city services. Service was recently expanded in Columbia Falls and the Canyon area. The "door to door" service varies by community and is designed to meet the needs of the elderly and disabled. Public transportation services and anticipated transportation needs over the 2007-2012 period in Whitefish (and Flathead County) are discussed in a Transit Development Plan (TDP) prepared for Eagle Transit by LSC Transportation Consultants during 2006.

In late February 2008, Eagle Transit began offering scheduled inter-city public bus service to commuters traveling between Kalispell and Whitefish, Whitefish and Columbia Falls, and Kalispell and Columbia Falls. The new service was the result of a cooperative agreement between Flathead County, MDT and the National Park Service that provided Eagle Transit with access to a fleet of buses typically used only during July and August in Glacier National Park. The agreement has allowed Eagle Transit to use the Park's vehicles for transit service between the three Flathead Valley communities for much of the year and enabled the National Park Service to continue meeting its summer transit needs.

Currently, the commuter buses between Kalispell and Whitefish operate between 6:30 a.m. and 6:10 p.m. Monday through Friday, with two designated stops (North Valley Hospital and the O'Shaughnessy Center) and seven requested stop locations in the Whitefish area. Buses headed to Kalispell currently leave designated stops in Whitefish twice each morning and buses from Kalispell arriving twice each evening. According to Eagle Transit's current commuter schedules, buses between Whitefish and Columbia Falls are not offered.

Locally, the SNOW (Shuttle Network of Whitefish) Bus operates three buses and provides complimentary transport to and from the Mountain Mall and the Whitefish Mountain Resort from late November through mid April. This seasonal shuttle service, paid for by local businesses, had about 54,000 riders during the 2007-2008 season.

## 1.8 Summary of Existing Transportation Conditions

**Figures 1-12, 1-13,** and **1-14** summarize the existing physical and operational characteristics of Spokane Avenue, 2nd Street, and Baker Avenue.

The following "highlights" are identified from the assessment of existing transportation conditions presented in this chapter:

- US 93 through Whitefish accommodates significant amounts of both local and through traffic. The route is part of a National Highway System (NHS) route and serves as an important element of the downtown Whitefish's street network.

- Traffic volumes on US 93 vary notably within the community. AADT volumes are higher in the commercial area along Spokane Avenue south of the Whitefish River (15,000 to 17,000 vehicles) than in the downtown area along 2nd Street west of Spokane Avenue (8,000 to 10,000 vehicles).

- Truck traffic, including through tractor-trailer combinations and local commercial delivery and construction vehicles, has historically represented a sizable percentage of the traffic on US 93 through Whitefish during portions of the day.

- The LOS analyses of the existing conditions reveals that some approaches at signalized intersections and several unsignalized intersections within the US 93 corridor and on Baker Avenue currently function at LOS D or lower during peak hours. These intersections include: Spokane Avenue and 13th Street; Spokane Avenue and 2nd Street; and Baker Avenue and 2nd Street. Spokane Avenue and 5th Street, and Baker Avenue and 4th Street. The poor LOS ratings predicted for the unsignalized intersections are the result of delays for side street traffic and not due to poor traffic flows on Spokane or Baker Avenues.

- Volume to capacity data shows that several sections of US 93 and Baker Avenue are at or approaching capacity and operate at poor Levels of Service (LOS D and E) during peak travel periods.

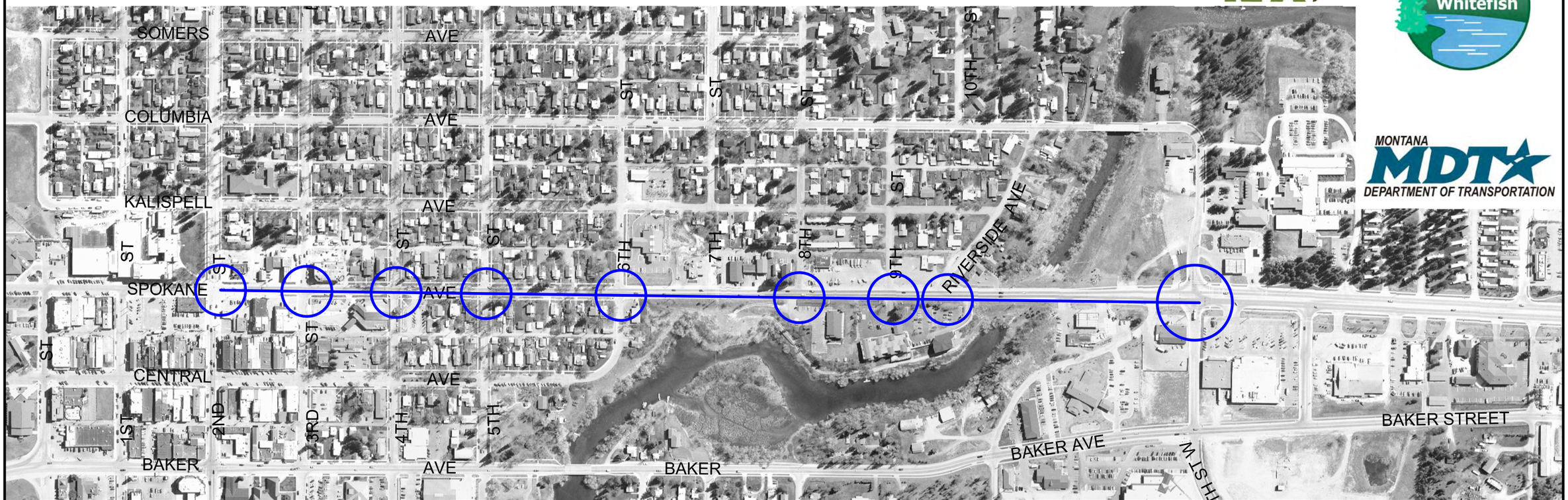
- The primary crash type along the US 93 corridor during a recent three-year period was rear-end collisions followed by right-turn and right angle collisions, sideswipes, and left turn collisions. These crash types are indicative of roadways experiencing traffic congestion.

- Spokane Avenue, 2nd Street, and Baker Avenue are integral to the City of Whitefish's existing and planned pedestrian and bicyclist trail network. Designated trail segments exist along each of these streets.

- Whitefish is well served by rail transportation; however, other forms of public transportation are seasonal (like the SNOW Bus to Whitefish Mountain Resort) or generally focused on serving "special needs" groups within the community.

WHITEFISH
URBAN CORRIDOR STUDY OF U.S. 93

# US 93 / SPOKANE AVENUE - EXISTING CONDITIONS




| | | 2nd STREET | | 3rd STREET | | 4th STREET | | 5th STREET | | 6th STREET | | 7th STREET | | 8th STREET | | 9th STREET | | RIVERSIDE AVE. | | 13th STREET | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROW WIDTH | | | 70' | | | | | | | | 70' | | 70' | | | | | | 235' | | 185' - 190' |
| LANE CONFIGURATION | NB | | | | | | | | | | | | | | | | | | TRANSITION | | |
| | SB | | | | | | | | | | | | | | | | | | | | |
| ADT (2 WAY VOLUME) | | | 10 380 | | | | | | 15 200 | | | | | | | | | 15 200 | | | 17 450 |
| PEAK HOUR LOS AM/PM | NB | C/F | | | | C/C | | C/D | | | | | | | | | | | | C/C | |
| | SB | | | | | | | | | | | | | | | | | | | | |
| ON-STREET PARKING | | | NO | | YES | | YES | | YES | | NO | | NO | | NO | | NO | | NO | | NO |
| TRAFFIC CONTROL | | ooo | | * | | * | | * | | * | | | | * | | * | | * | | ooo | |
| # OF CRASHES (Oct. 1, 2003 - Sept. 30, 2006) | | 11 | 0 | 7 | 0 | 8 | 1 | 3 | 3 | 3 | 1 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 17 | |
| SIDEWALKS | | | YES | | YES | | YES | | YES | | YES | | YES | | YES | | YES | | YES | | YES |
| BICYCLE PATH / LANE | | | NO | | NO | | NO | | NO | | NO | | NO | | NO | | SHARED ROADWAY | | | | |
| POSTED SPEED | | | 25 | | 25 | | 25 | | 25 | | | 25 | | | 25 | | 25 | | 35 | | 45 |

- Highly congested, excessively long delays
- Tolerable congestion, noticeable delays
- Moderate delays
- Little or no delays

* SIDE STREET STOP

FIGURE 1-12

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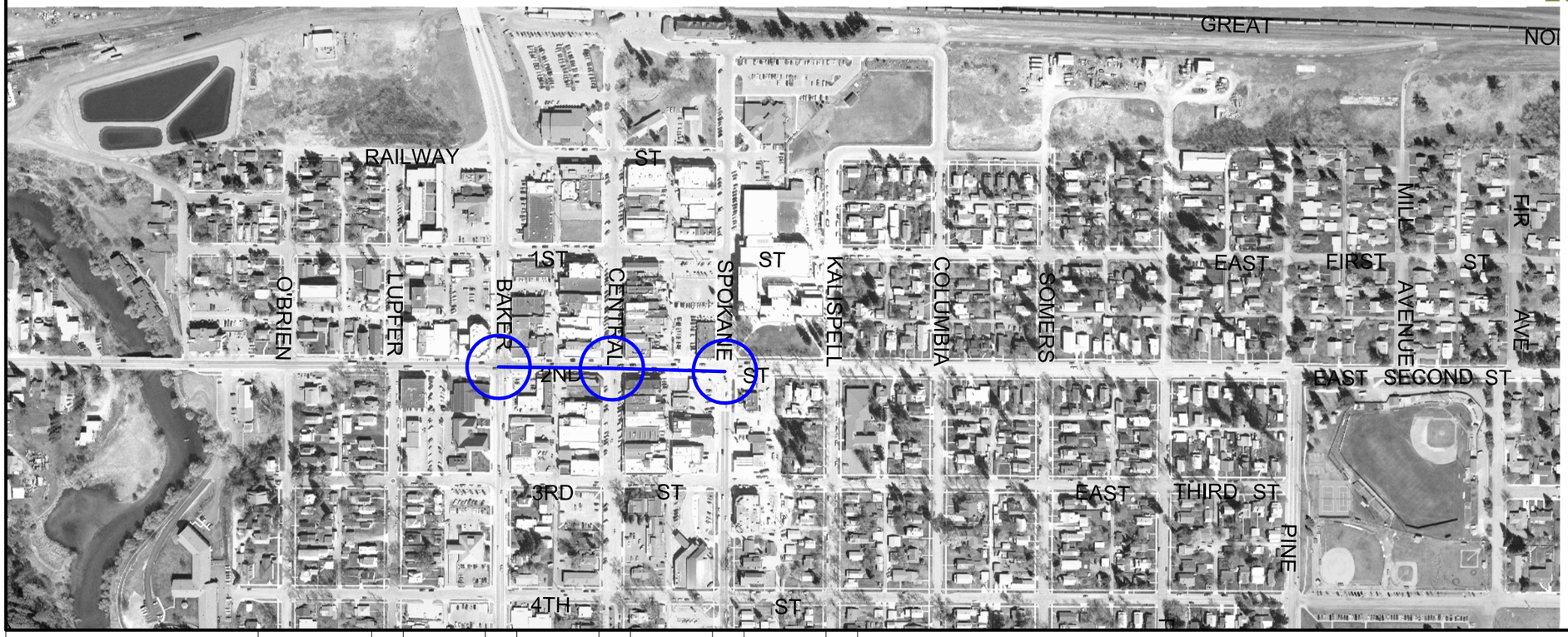
URBAN CORRIDOR STUDY OF U.S. 93

# US 93 / 2nd STREET - EXISTING CONDITIONS




200 0 200 400
(SCALE IN FEET)

N

| | | | LUPFER AVE | | BAKER AVE | | CENTRAL AVE | | SPOKANE AVE | | KALISPELL AVE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROW WIDTH | | 70' | | 70' | | 70' | | 70' | | 70' | | 70' |
| LANE CONFIGURATION | WB | | | | | | | | | | | |
| | EB | | | | | | | | | | | |
| ADT (2 WAY VOLUME) | | 9 740 | | | | 7 870 | | 7 800 | | 3 700 | | 3 620 |
| PEAK HOUR LOS AM/PM | WB | | | | C/E | | B/C | | C/F | | C/C | |
| | EB | | | | | | | | | | | |
| ON-STREET PARKING | | YES | | YES RESTRICTED | | YES | | YES / NO | | NO | | YES |
| TRAFFIC CONTROL | | | | | | | | | | | | |
| # OF CRASHES (Oct. 1, 2003 - Sept. 30, 2006) | | | 2 | 4 | 14 | 1 | 5 | 0 | 11 | | 4 | |
| SIDEWALKS | | YES | | YES | | YES | | YES | | YES | | YES |
| BICYCLE PATH / LANE | | NO | | NO | | NO | | NO | | ON ROAD BIKE LANE | | |
| POSTED SPEED | | 25 | | 25 | | 25 | | 25 | | 15 | | 25 |

* SIDE STREET STOP

- Highly congested, excessively long delays
- Tolerable congestion, noticeable delays
- Moderate delays
- Little or no delays

FIGURE 1-13

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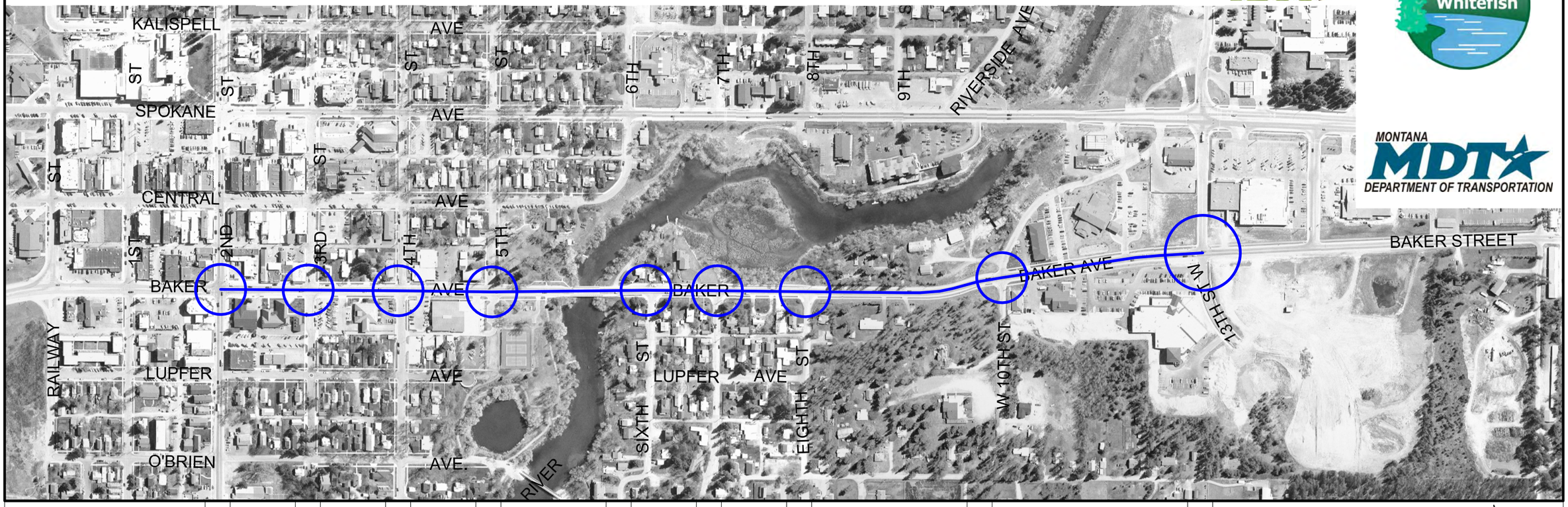
WHITEFISH
URBAN CORRIDOR STUDY OF U.S. 93

# BAKER AVENUE - EXISTING CONDITIONS




| | | 2nd STREET | | 3rd STREET | | 4th STREET | | 5th STREET | | 6th STREET | | 7th STREET | | 8th STREET | | 10th STREET | | 13th STREET W | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROW WIDTH | | | 70' | | 70' | | 70' | | 70' | | 70' | | 70' | | 70' | | 70' | | |
| LANE CONFIGURATION | NB | | ← | | ← | | ← | | ← | | ← | | ← | | ← | | ← | | ← |
| | SB | | → | | → | | → | | → | | → | | → | | → | | → | | → |
| ADT (2 WAY VOLUME) | 13 100 | | ← | | 9 400 | | → | | ← 12 300 → | | 12 800 | | ← 12 900 | | | | → | | ← 8 460 |
| PEAK HOUR LOS | NB | C/E | | | | B/D | | B/C | | | | B/C | | | | B/B | | B/C | |
| | SB | | | | | | | | | | | | | | | | | | |
| ON-STREET PARKING | | | YES RESTRICTED | | YES | | YES | | YES NO YES | EAST SIDE | NO | | NO | | NO | | NO | | NO |
| TRAFFIC CONTROL | | | | * | | * | | * | | * | | * | | * | | * | | 4 WAY STOP | |
| # OF CRASHES (Oct. 1, 2003 - Sept. 30, 2006) | | 14 | 2 | 3 | 0 | 2 | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 6 | |
| SIDEWALKS | | | YES | | YES | | YES | | YES | | YES | | YES | | YES | | YES | | NO |
| BICYCLE PATH / LANE | | | SHARED ROADWAY → | | | | | | | | YES | | YES | | ON ROAD BIKE LANE | | ON ROAD BIKE LANE | | |
| POSTED SPEED | | | 25 | | 25 | | 25 | | 25 | | 25 | | 25 | | 25 | | 25 | | |

- Highly congested, excessively long delays
- Tolerable congestion, noticeable delays
- Moderate delays
- Little or no delays

* SIDE STREET STOP

FIGURE 1-14

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# 2.0 COMMUNITY STRUCTURE AND SETTING

# 2.0 COMMUNITY STRUCTURE AND SETTING

This Part examines current and planned land uses, key demographic and socio-economic characteristics of the Whitefish community, and describes environmental considerations that could potentially influence the location or design of US 93 through the City.

## 2.1 Current and Planned Land Uses in the Corridor

This section describes the existing and likely future land uses within the US 93 corridor study area. The focus of this discussion is on land uses along Spokane Avenue, 2nd Street, and Baker Avenue and applicable land use plans and regulations.

### 2.1.1 Existing Corridor Land Uses

Highway-oriented businesses and services generally dominate US 93 (Spokane Avenue) between Montana Highway 40 (outside the corridor study area) and 13th Street. Numerous highway-oriented businesses, hotels, restaurants, and the Mountain Mall exist along Spokane Avenue south of 13th Street. Commercial uses dominate the area between 13th and 6th Streets including various retail establishments, restaurants, casinos, professional offices, auto sales and services, several hotels and motels, a supermarket, and convenience stores with fuel sales.

Between 6th and 4th Streets, Spokane Avenue passes through a traditional residential neighborhood being redeveloped with new uses. Single-family and multi-family homes in this area are interspersed with commercial and office uses that occupy several former residences along both sides of Spokane Avenue.

North of 4th Street, Spokane Avenue enters the commercial core of Whitefish. The commercial core area includes retail commercial uses, professional and government offices, financial institutions, restaurants and taverns, hotels, and art galleries and studios. Central School is located in the northeast quadrant of the Spokane Avenue and 2nd Street intersection. A new surface parking lot was recently developed on City-owned property northwest of the same intersection.

US 93 turns west at 2nd Street and bisects Whitefish's central business district. Between Spokane Avenue and Baker Avenue, 2nd Street is flanked by retail establishments, offices, and parking lots. Retail establishments and professional offices are the primary land uses along 2nd Street west of Baker Avenue. The intersection of 2nd Street and Baker Avenue is one of the City's busiest intersections. Notable land uses at the intersection of 2nd Street and Baker Avenue include the Whitefish City Hall building on the northeast corner, First American Bank on the northwest corner, and Glacier Bank on the southwest corner.

MDT has been unsuccessful in acquiring land for highway purposes from First American Bank property. On March 22, 2006, District Court Judge Katherine R. Curtiss

entered a *Findings of Fact, Conclusions of Law and Order in Flathead County Cause No. DV-04-474(B)* that included the following determination:

> "The Court determines that the use to which the MDOT seeks to apply the property of Defendant American Bank is not a necessary public use authorized by law; it is not a more necessary public use than the existing public use; and the public interest does not require the taking of said property."

The District Court then formally dismissed MDT's complaint with prejudice. "With prejudice" means that the right to bring a further action (i.e. condemnation) on the same property is prohibited as the Court's determination is conclusive on the issue. Therefore, any future improvements to the intersection of 2nd Street and Baker Avenue would have to be completed without acquiring any property from American Bank through condemnation.

Baker Avenue is a major north-south roadway with the only grade-separated crossing of the BNSF Railway in Whitefish. North of 2nd Street, Baker Avenue serves public uses (Whitefish Fire Department) and commercial uses south of the Wisconsin Avenue overpass. Wisconsin Avenue provides access to residential areas, commercial uses, recreational sites, and is part of the route used to access the Whitefish Mountain Resort. Between 2nd Street and the Whitefish River, Baker Avenue serves a variety of land uses including retail and banking businesses, churches, the U.S. Post Office, and Riverside City Park. South of the river, Baker Avenue passes through a residential area before entering a newer commercial area between 10th and 13th Streets.

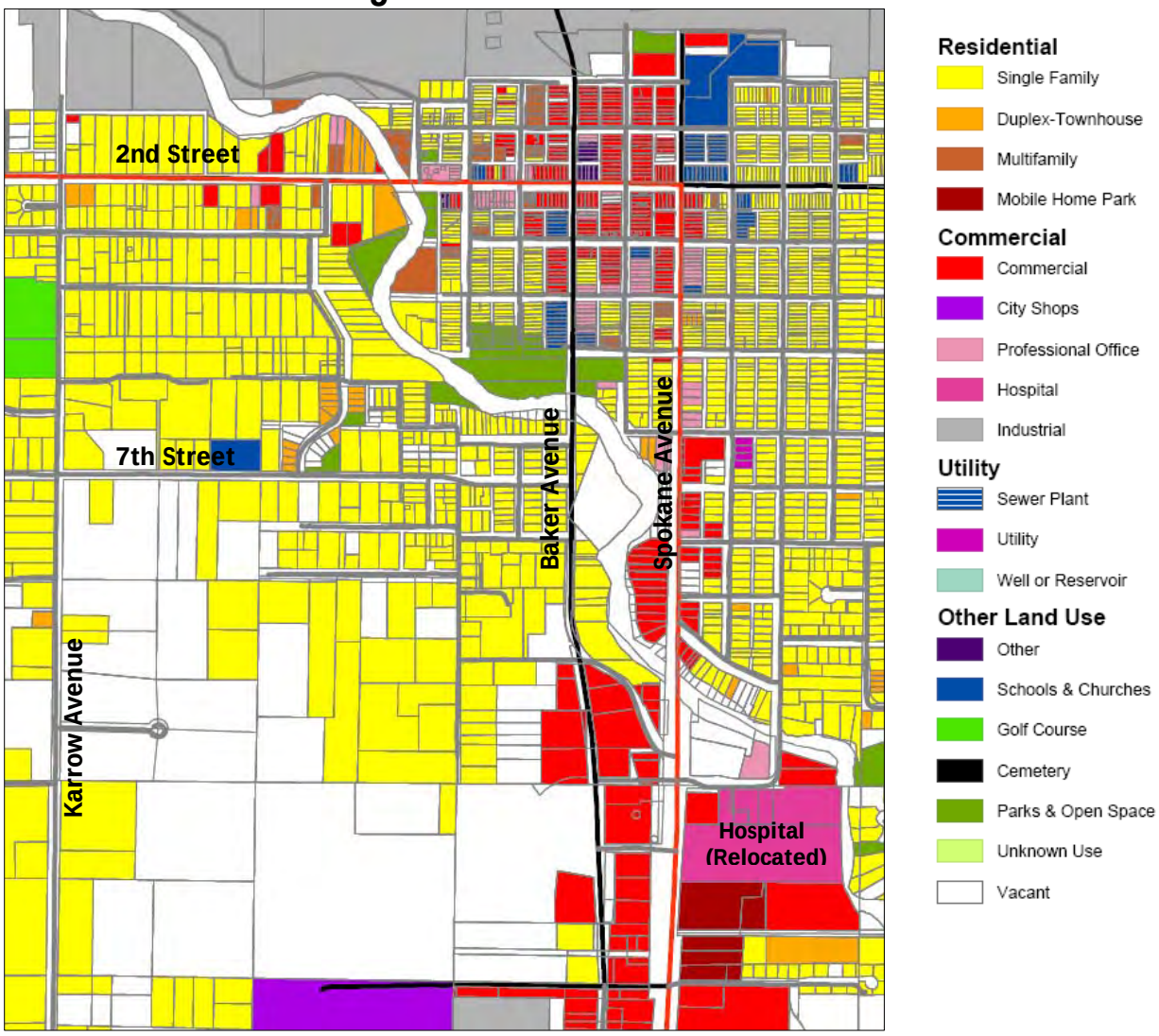
**Figure 2-1** shows existing land uses in the corridor study area. The locations of Spokane Avenue, 2nd Street, and Baker Avenue are highlighted on the map. Note the hospital shown in the lower right portion of **Figure 2-1** has been relocated to an area north of Montana Highway 40 and east of US 93. The old hospital area is being redeveloped with residential lots and townhouses.

### 2.1.2 Land Use Plans

Guidance on land use planning within the City of Whitefish and its jurisdictional area is provided by the Whitefish City-County Growth Policy adopted by the City Council in November 2007. The new Growth Policy replaces the 1996 City-County Master Plan and is the result of a community-wide planning effort that began in January 2006. The Growth Policy reflects changed conditions in the Whitefish area since the 1996 Master Plan was adopted.

The City-County Growth Policy establishes a vision to guide growth and development in the community over the next 20 years. The Growth Policy addresses growth and development issues through detailed discussions of various elements including: natural resources, economic development, land use, community facilities, housing, and transportation.

## FIGURE 2-1: Existing Land Uses




Source: Draft Land Use Element, City of Whitefish City-County Growth Policy, 2006

Two concepts apparent in the Growth Policy are the preservation of Whitefish's "community character" and sustainability. Preservation of community character means maintaining and enhancing the qualities and resources that make Whitefish unique. With respect to land use and transportation, sustainability translates into compact growth patterns, mixed land uses, and multiple transportation choices to help reduce vehicle trips. The Growth Policy recognizes that managing growth is essential to preserving the community's character and sustainability.

### 2.1.3 Whitefish Downtown Business District Master Plan

The Whitefish Downtown Business District Master Plan, approved by the Whitefish City Council in April 2006, outlines plans to redevelop the commercial core area of the City.

The Plan was jointly developed by the City of Whitefish and the "Heart of Whitefish" downtown business association in an effort to increase the vitality of the downtown area. The Plan identifies and evaluates the long range opportunities and needs of the downtown business district and recommends land use changes and new development ideas to ensure the long-term viability of the downtown.

The Plan is used by the City to guide the development of privately- and publicly-owned parcels and offers strategies for improving the appearance, function, and vitality of the downtown area. **Figure 2-2** shows the redevelopment concept and future land uses proposed for the downtown area of Whitefish according to the Master Plan.

The Downtown Business District Master Plan makes several recommendations that affect US 93 through downtown Whitefish including:

- Improving access and circulation by developing Spokane Avenue and Baker Avenue as a couplet with a "contra-flow" lane on Baker Avenue.
- Maintaining on-street parking along both sides of 2nd Street for a half block east and west of Central Avenue.
- Providing a two-lane facility on 2nd Street and prohibiting left turn lanes from 2nd Street onto Central Avenue.
- Providing turn lanes and improving truck-turning radii at the intersection of 2nd Street and Baker Avenue.
- Linking Spokane and Baker Avenues by providing a distinctively designed bridge across the Whitefish River at 7th Street.
- Developing a pedestrian streetscape and improving pedestrian facilities to support and improve the viability of businesses, improve safety along 2nd Street, and provide connections to adjacent neighborhoods.

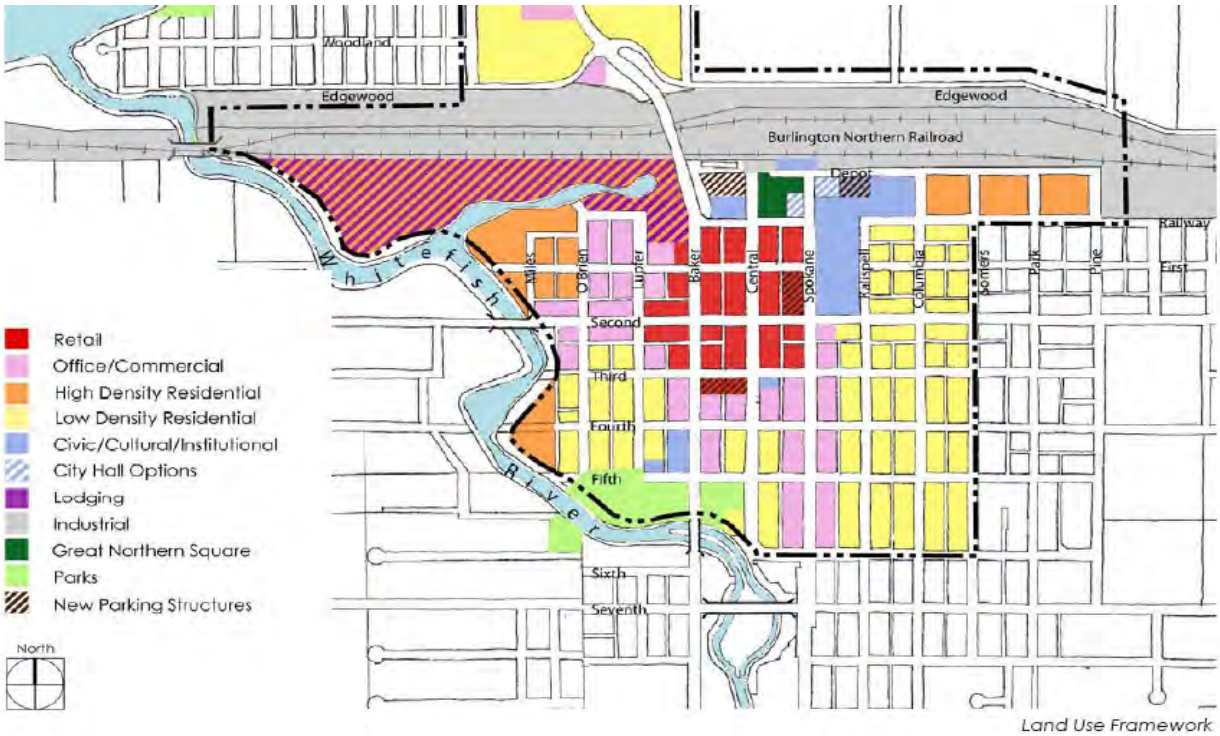
It is important to recognize that MDT is the road authority for US 93 (Spokane Avenue and 2nd Street) through Whitefish. Although MDT was consulted during the development of the Downtown Business District Master Plan, it was not responsible for the recommendations included in the Plan. Some recommendations for changes on US 93 may not be consistent with MDT and FHWA requirements. Therefore, any proposed changes to these roadways will require MDT's concurrence.

While there is no guarantee that the downtown will be developed entirely as proposed over the next 20 years, the City has begun to implement several priority (or catalyst) projects identified in the Plan. Recent actions to implement the catalyst projects identified in the Plan include:

- Development of a surface parking lot on property at the northwest corner of the intersection of Spokane Avenue and 2nd Street;
- Construction of streetscape enhancements on Central Avenue;
- Investigation of potential new sites in downtown Whitefish for City Hall; and
- Construction of a new Emergency Services Center to house the Whitefish Fire and Police Departments and the City Court.

Developing a new City Hall and relocating the Fire Department and City Court from their current locations will facilitate redevelopment of the property located on the corner of 2nd Street and Baker Avenue. However, it is uncertain when a new City Hall building will be constructed or when redevelopment of the existing City Hall property will occur.

## FIGURE 2-2: Proposed Land Use Concept from the Whitefish Downtown Business District Master Plan




Source: Whitefish Downtown Business District Master Plan, Crandall Arambula PC, December 2005

### 2.1.4 Existing Land Use Regulations

Properties adjoining the existing US 93 corridor (Spokane Avenue and 2nd Street) have been zoned as WB-2 (Secondary Business District), WR-4 (High Density Multi-family Residential) and WB-3 (General Business District). WB-2 zones are generally intended for retail uses along highway corridors and are found along Spokane Avenue between 13th and 6th Streets. Properties along Spokane Avenue between 6th and 4th Streets are zoned WR-4 which permits higher density residential uses and other conditional uses such as professional offices, galleries, and bed and breakfast inns. Areas adjoining Spokane Avenue north of 4th Street and most of the area along 2nd between Spokane Avenue and the Whitefish River are zoned WB-3. The WB-3 district is intended for financial, retail, commercial, governmental, professional, institutional and cultural activities.

Properties along Baker Avenue between 2nd and 4th Streets fall within WB-3 (General

Business District) zone. Lands adjoining Baker Avenue between 4th and 9th Streets fall within various residential zones of various densities (WR-2, WR-3 and WR-4) before transitioning to the Secondary Business District (WB-2).

Land use changes or new developments on properties adjoining the US 93 corridor could potentially affect the operation or safety of the highway. As noted earlier, MDT's System Impact Action Process is in place to review and coordinate the potential impacts of such projects with local land use agencies, private developers, and/or other governmental agencies to ensure measures are considered and implemented to preserve the function and safety of state highways. MDT routinely considers potential environmental effects on adjacent land uses during project development activities for its highway improvement or reconstruction projects.

### 2.1.5 Future Land Use and Community Development

The Land Use Element of the City's Growth Policy provides a graphic representation of the type, density, and spatial extent of future growth in the Whitefish area. **Figure 2-3** shows a portion of the future land use map for the Whitefish area. This figure generally incorporates the proposed land use concept identified in the Downtown Business District Master Plan previously presented in **Figure 2-2**. Revisions to the City's current zoning regulations may be necessary to accommodate all of the land use changes called for in the Master Plan.

The future land use map shows the lands adjoining the US 93 corridor are primarily designated as "General Commercial" or "Core Commercial." General Commercial uses typically apply to the US 93 South corridor and include a variety of auto-oriented commercial and service uses. The primary access is by automobile with sufficient parking provided on site.

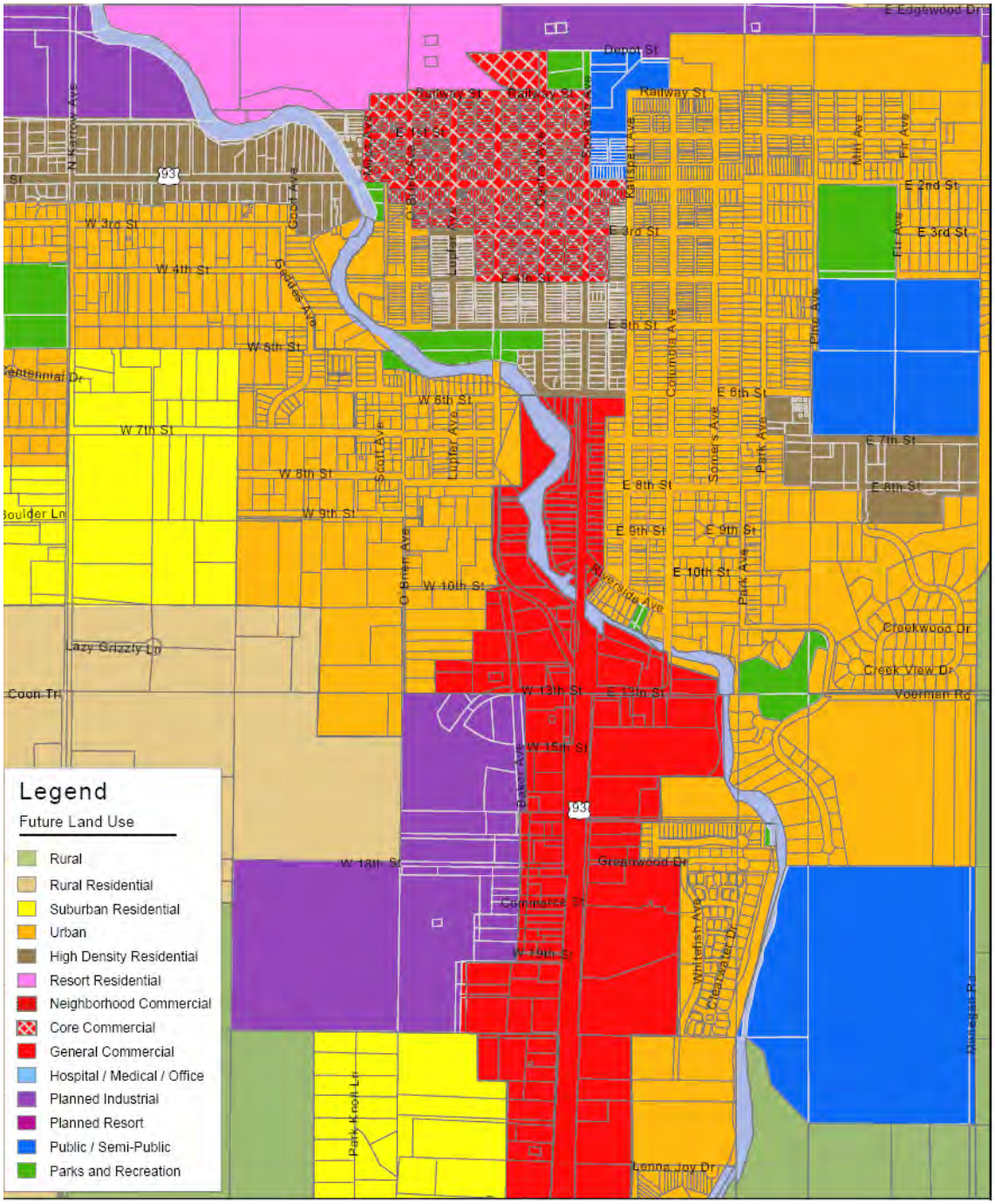
The Core Commercial designation applies to the downtown area of Whitefish and surrounding transitional and mixed use areas. The major uses in such areas include retail commercial, professional and government offices, financial institutions, restaurants and taverns, hotels, and art galleries and studios.

Lands along Baker Avenue have been designated for "High Density Residential", "Parks and Recreation", "Urban", "General Commercial" and "Planned Industrial Uses."

The City of Whitefish has examined areas within the community with development potential as a way to gauge where the community may grow in the future. The Growth Policy indicates more than 2,400 new housing units could potentially be developed on the identified properties. Of these new potential new housing units, approximately half exist in already approved developments that are either partially built out or have not yet begun construction. The City estimates at least 1,200 housing units could be built on other vacant and/or underdeveloped lands in the planning area. The general corridor study area contains several parcels with development potential, most notably along the Karrow Avenue corridor southwest of the downtown area and at the former North

Valley Hospital site (east of Spokane Avenue) where a redevelopment proposal was approved in 2009.

## FIGURE 2-3: Future Land Use Map for the City of Whitefish




Map Source: Whitefish City-County Growth Policy, Future Land Use-Detail Map #2 (South Section) adopted November 19, 2007. Available at: http://planitwhitefish.com/pdf/growth_policy/FutureLandUse_CoreDetail_South.pdf

## 2.2 Community Socio-Economic Characteristics

Population growth trends, household characteristics, and employment patterns are key factors in gauging transportation needs in Whitefish and the corridor study area. This section provides an overview of demographic characteristics in the City of Whitefish including data on population growth trends, race, age, and ethnicity, household income, and community travel characteristics. These statistics are compared with those for Flathead County and the State of Montana where possible to identify relevant trends.

### 2.2.1 Demographics and Socio-Economic Conditions

**Historic Population Trends.** Historically, the City of Whitefish's population fluctuated until 1960 when the community began a period of sustained growth. These changes in population directly corresponded to economic conditions and employment associated with the railroad.

**Table 2-1** presents population data and growth rates for the Cities of Whitefish, Flathead County, and the State of Montana over the 1960 to 2000 period.

Beginning in 1960, the City's population showed stable and positive growth posting population increases ranging from 10% to 18% during successive decades to the year 2000. Over this 40 year period, the City's population increased by 70% from 2,965 to 5,032 residents. This sustained growth can be attributed to the City's economic base becoming more diversified and the community's emergence as a year round resort area. As **Table 2-1** shows, the City of Whitefish grew at a rate almost twice that experienced by the State of Montana during the 1960 to 2000 period. The table shows Flathead County's population increased by about 125% over the 1960 to 2000 period.

### Table 2-1: Historic Population Growth in Whitefish, Flathead County, and the State of Montana (1960-2000)

| US Census Population Data | | | | | | |
|---|---|---|---|---|---|---|
| | 1960 | 1970 | 1980 | 1990 | 2000 | % Change 1960-2000 |
| **City of Whitefish** | 2,965 | 3,349 | 3,703 | 4,368 | 5,032 | **+70%** |
| **Flathead County (Total)** | 32,965 | 39,460 | 51,966 | 59,218 | 74,471 | **+126%** |
| **Flathead County (Rural) *** | 17,717 | 22,933 | 34,462 | 40,012 | 51,571 | **+189%** |
| **State of Montana** | 674,767 | 694,409 | 786,690 | 799,065 | 902,195 | **+34%** |

| Population Change by Decade (% change) | | | | |
|---|---|---|---|---|
| | 1960 -1970 | 1970-1980 | 1980-1990 | 1990-2000 |
| **City of Whitefish** | +13.0% | +10.6% | +18.0% | +15.2% |
| **Flathead County (Total)** | +19.7% | +31.7% | +14.0% | +25.8% |
| **Flathead County (Rural)*** | +29.4% | +50.0% | +16.1% | +28.9% |
| **State of Montana** | +2.9% | +13.3% | +1.6% | +12.9% |

Source: US Bureau of the Census, Census of Population (1960-2000)
* Rural Flathead County Population = Total County Population minus populations of incorporated cities in County

Much of the population growth seen in Flathead County has occurred outside of the major cities in the county. From 1960-2000, the rural population of Flathead County increased by nearly 190%. This long-term growth rate is substantially higher than those experienced in all of the cities in Flathead County over the same period. Development trends on rural lands surrounding the City of Whitefish were generally similar to those experienced in other areas of Flathead County over the 1960-2000 period.

The population of the City of Whitefish increased by an average of about 1.7% per year over the 1960-2000 period. During this same time, the population of Flathead County increased at an average rate of about 3.1% per year.

**Population Trends Since 2000.** As shown in **Table 2-2** below, the U.S. Census Bureau estimates the current (2008) population of the City of Whitefish at 8,281. This represents a total population change of more than 64% between 2000 and 2008 and translates to an average growth rate of 8% per year over the period. This rate is significantly higher than that experienced over the 1960-2000 period when the City's population increased by about 70% over the four decade period. The population estimates show Whitefish was the fastest growing incorporated area in Montana over the 2000 to 2008 period.

**Table 2-2** also shows that notable growth continued in Flathead County with the annual rate of growth being about three times higher than that of the State of Montana for the 2000-2008 period. The data shows the population of the rural areas in Flathead County grew by about 4% over the same period. The population increases shown for Whitefish and other incorporated cities in the County since 2000 are likely due to recent annexations and the establishment of residences in previously approved developments in the communities.

## Table 2-2: Current Population Estimates and Growth Rates

| Geographic Area | 2000 Census | 2008** Estimate | % Change 2000-2008 | % Annual Growth 2000-2008 |
|---|---|---|---|---|
| **City of Whitefish** | 5,032 | 8,281 | **+64.6%** | **8.1%** |
| **Flathead County (Total)** | 74,471 | 88,473 | **+16.6%** | **2.4%** |
| **Flathead County (Rural)*** | 51,571 | 53,749 | **+4.2%** | **0.5%** |
| **State of Montana** | 902,195 | 967,440 | **+7.2%** | **1.0%** |

* Rural Flathead County Population = Total County Population minus populations of incorporated cities in County.

** Population data for 2008 are estimates as of July 1, 2008. Annual Estimates of the Population for Incorporated Places in Montana, by County: April 1, 2000 to July 1, 2008. Source: Population Division, U.S. Census Bureau Release Date: July 1, 2009

**In-Migration.** As noted in previous sections, the populations of the City of Whitefish and Flathead County have increased notably since 1960. Migration into the Whitefish area and Flathead County has played a significant role in this growth.

According to the data from the 1980 Census, 25% of the City of Whitefish's residents (excluding children 5 years of age or under) were not living in Flathead County in the 5-year period prior to the Census. In 1990, the number of Whitefish residents who had

moved from outside Flathead County in the previous 5 years had increased to 27% and half of those new residents had lived in another state. These migration trends continued and became more pronounced by the year 2000. Data from the 2000 Census showed the number of residents who moved to Whitefish from outside Flathead County increased to 33% and about 24% of the City's population had moved in from out of state within the previous 5 years.

The 2000 Census data showed similar trends for Flathead County with 22% of the county's population having migrated to Flathead County during the previous 5 years. The Flathead County Growth Policy suggests natural increases account for only about 18% of total population increase seen in the county since 2000. These migration trends are due in part to the growing popularity of Whitefish and Flathead County as year round tourist and retirement destinations. New development in the County has also created year-round construction employment opportunities and encouraged the in-migration of new permanent residents.

**Seasonal Residents.** There is a strong demand in Flathead County and the Whitefish area for second home ownership and for occasional use and vacation housing. Housing units dedicated for seasonal, recreational, or occasional use have been identified and quantified in the Census. In 2000, 267 housing units in the City of Whitefish were occupied for occasional use, an 8% increase over the number of such housing units reported in the 1990. Similar data for Flathead County showed a 42% increase over the number of such housing units reported in 1990.

**Ethnicity.** The City of Whitefish and Flathead County have very homogeneous racial populations. The 2000 Census indicates that about 96% of the total population of Whitefish and the County identified themselves as Caucasians (white). The State of Montana is more diverse with about 91% of the population in 2000 identifying themselves as being of the white race.

**Age Distribution.** Census data on the age of the population since 1980 within in the City of Whitefish, Flathead County and the State of Montana was reviewed to identify notable trends. This review showed the following trends for the City of Whitefish and Flathead County:

- The number of pre-school age residents and school age residents (5-17 years old) declined in the City of Whitefish and Flathead County between 1980 and 2000.
- Notable declines in the number of persons between 18 and 24 of age were apparent in both the City and Flathead between 1980 and 1990. However, that trend also appears to have stabilized and population increases in this age group were realized by 2000.
- The number of retirement age residents has increased in the City and County since 1980.
- As the population of the City of Whitefish and Flathead County has continued to grow, it has also aged considerably since 1980.

**Environmental Justice Considerations.** Title VI of the Civil Rights Act of 1964 and related statutes assure that individuals are not 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, religion, age, gender or disability. Executive Order 12898 directs Federal agencies 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."

"Disproportionately high and adverse effect" on minority and low-income populations means an adverse effect that:

- Is predominately borne by a minority population and/or a low-income populations; or
- Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

Executive Order 12898 identifies minority communities as "Black, Hispanic, Asian, American Indian and Alaskan Native, Native Hawaiian or other Pacific Islander." The 2000 Census shows these ethnic groups accounted for 3.8% of the City's population and 3.2% of the County's population at the time of the census. These minorities accounted for 9% of the State's total population in 2000. A review of detailed population data for the City of Whitefish shows the overall percentage of minority populations is very near the County average and does not suggest that minority populations would be disproportionately affected by corridor improvements.

The Executive Order defines low income as a person whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines. The median household income levels reported in the 2000 Census for Flathead County and the City of Whitefish were $34,466 and $33,038, respectively. Both of these income levels were slightly higher than the median household income for the State of Montana ($33,024) at the time of the 2000 Census.

A recent 3-year (2006-2008) estimate of median household income prepared by the U.S. Census Bureau American Community Survey shows that median household income levels in Flathead County ($44,867) are slightly above the statewide median household income ($44,042). However, similar data for 2008 shows the median household income in the County ($41,110) was notably below the statewide median household income ($43,654). Current estimates of median household income for residents of the City of Whitefish from the Census Bureau or State of Montana are not available for comparison.

According to 2000 Census data, the number of residents living below the poverty line was higher for the City of Whitefish than for the State and Flathead County. About 14.2% of all individuals living in Montana were below the poverty line in 2000. Census data shows 13.0% and 18.2% of the individuals living in Flathead County and City of Whitefish, respectively, were living in poverty in 2000. Estimates of the numbers of residents in Montana and Flathead County living below the poverty line for 2008 from the US Census Bureau shows little change since 2000—14.1% for the state and 12.1% for Flathead County. Comparable 2008 poverty data for the City is unavailable.

The available data on income and poverty levels does not suggest that the effects of corridor improvements would be disproportionately high and adverse to low income persons.

**Traditionally Underserved Populations.** Not all groups are specifically identified as being "environmental justice" populations but they may be traditionally underserved populations. For example, an elderly or a disabled person who is not low-income or a minority would not be considered among the environmental justice population. Therefore, two other traditionally underserved populations were identified—the elderly (age 65+ at the time of the 2000 Census) and residents with sensory, physical, mental, self-care, "go-outside-the-home," and employment disabilities. **Table 2-3** shows the percentages of elderly and disabled populations in Whitefish and compares them with similar populations within the County and State of Montana.

### Table 2-3: Underserved Populations in Whitefish as Compared to County and State Averages

| Area Considered | Percent of Population (Age 65+) | Percent of Elderly Population with Disability | Percent of Population Age 5+ with Disability |
|---|---|---|---|
| **State of Montana** | 13.4% | 9.4% | 28.7% |
| **Flathead County** | 13.0% | 8.5% | 27.7% |
| **City of Whitefish** | 14.4% | 7.6% | 21.1% |

Source: US Bureau of the Census, Census of Population (2000)

As **Table 2-3** shows, with the exception of percentage of elderly residents, the percentages of City residents in the identified underserved population groups were below those for the County and State in the City of Whitefish at the time of the 2000 Census.

## 2.2.2 Personal Travel and Commuting Characteristics

**Household Vehicle Ownership.** About 95% of the households in the City of Whitefish and Flathead County owned at least one vehicle at the time of the 2000 Census. More recent (2005) data from the U.S. Bureau of the Census American Community Survey shows 98% of the households in Flathead County owned at least one vehicle. Updated information on vehicle ownership in the City is not available.

**Mode of Transportation to Work.** Information about the modes of transportation to work by residents in the City of Whitefish, Flathead County, and the State of Montana is shown in **Table 2-4**. The table shows the majority of residents in all geographic areas rely on personal vehicles or carpools for transportation to work destinations. The data shows that about 83% of Whitefish residents used personal vehicles or carpooled to work as compared to nearly 90% of county residents and about 86% of state residents in 2000. A higher percentage of Whitefish residents also rely on buses for transportation to work and walk or bicycle to work than do Flathead County or Montana residents at the time of the 2000 Census.

## Table 2-4: Mode of Transportation to Work

| Transportation Mode | City of Whitefish | City of Whitefish % | Flathead County | Flathead County % | Montana | Montana % |
|---|---|---|---|---|---|---|
| **Drove Alone** | 1,576 | 69.4% | 26,229 | 77.0% | 311,872 | 73.9% |
| **Carpool** | 307 | 13.5% | 4,139 | 12.2% | 50,192 | 11.9% |
| **Bus** | 54 | 2.4% | 114 | 0.3% | 2,441 | 0.6% |
| **Streetcar** | 0 | 0.0% | 0 | 0.0% | 96 | 0.0% |
| **Railroad/Subway** | 0 | 0.0% | 4 | 0.0% | 79 | 0.0% |
| **Ferry** | 0 | 0.0% | 0 | 0.0% | 29 | 0.0% |
| **Taxicab** | 0 | 0.0% | 18 | 0.1% | 167 | 0.0% |
| **Walk** | 172 | 7.6% | 1,373 | 4.0% | 23,336 | 5.5% |
| **Motorcycle** | 0 | 0.0% | 14 | 0.0% | 338 | 0.1% |
| **Bicycle** | 27 | 1.2% | 201 | 0.6% | 4,049 | 1.0% |
| **Other** | 0 | 0.0% | 232 | 0.7% | 2,649 | 0.6% |
| **Work at Home** | 135 | 5.9% | 1,721 | 5.1% | 26,911 | 6.4% |
| **Average Travel Time** | 14.6 minutes | | 19.0 minutes | | 17.7 minutes | |

Source: U.S. Census Bureau, 2000, STF-3

### 2.2.3 Current Economic Conditions

**Flathead County Economy and Employment.** Flathead County has a diverse economic base, which includes: manufacturing (primary metals, wood products, and high-tech), transportation (railroads), tourism and travel, the federal government (including the USDA Forest Service and the National Park Service), growing areas of healthcare, specialized services, construction, and retail trade. Flathead County was historically a natural resource based economy; however, the economy has changed and diversified over the last twenty years with strong growth in retail trade and service industries.

Between the years 1970 and 2007, the number of jobs in Flathead County more than tripled, from 15,627 jobs in 1970 to 63,320 jobs in 2007. Job growth in Flathead County steadily increased between 1970 and 2007 with the largest increase occurring during the 1990 to 2000 period. Between 1990 and 2000, the number of jobs in the county increased by nearly 16,000 representing an increase of nearly 50%. In 2007, the Flathead County economy supported an estimated 63,807 jobs, an increase of more than 14,500 jobs since the year 2000.

The five private industries with the largest increases in the number of jobs over the 1970 to 2000 period were (in order): services; retail trade; construction; finance, insurance, and real estate; and local government. Employment data shows the service industry provided the largest number of jobs in the county during 2007 with health care, accommodations, and food services accounting for nearly 45% of the jobs within the service industries. It is important to note that the number of jobs in Flathead County between 1970 and 2000 reflect Standard Industrial Classification (SIC) codes to identify a firm's primary business activity and that the numbers of jobs for 2007 are based on North American Industrial Classification System (NAICS) codes. NAICS codes provide a greater level of detail about a firm's activity than SIC codes.

The economy of Flathead County, like much of the rest of the nation, has slowed considerably since 2008. The County has seen unemployment rates that were some of the highest in Montana beginning in late 2008. The downturn of the local economy is related to significant declines in the construction and real estate industries, cutbacks and reductions in the wood products industry, and layoffs and cutbacks in manufacturing industries and nearby mining operations. The county has also felt the effects of the national economy on the nonresident travel industry. The 2009 Economic Outlook for Flathead County prepared by the Bureau of Business and Economic Research from the University of Montana-Missoula suggests the county's economy will recover relatively quickly and resume growing by 2012.

**Whitefish Area Economy and Employment.** Historically, the economic foundation of Whitefish was based on timber, agriculture, and the railroad. However, during the 1950s and 1960s the local economy began an evolution toward an economy based on tourism, outdoor recreation, and service industries. The community has become a desirable location for new residents and visitors and resort development.
Whitefish experienced a surge in new housing construction in the early 1990s, which created a construction boom in the city and surrounding area. Although construction activity declined during the mid-1990s and activity is presently slowing, the community is still seeing notable construction and new development activity. The increase is not limited to new housing units, but includes new commercial development, and expansion of resort development.

**Table 2-5** presents employment data by industry for the City of Whitefish over the 1980 to 2000 period. The table shows that by 2000, more than 2,350 jobs existed in Whitefish and that 760 jobs were added to the local economy between 1980 and 2000. The table also indicates that significant increases in employment occurred in the entertainment and recreation sector, the finance, insurance and real estate industry, and construction industry. Health and professional services, retail trade, and services associated with the tourism industry constitute the primary employers. More than half of the employment within the City during 2000 occurred in the professional services industry, the entertainment and recreation industry, and the retail trade industry. The only industries showing declines in employment during the 1980 to 2000 period were agriculture and forestry and transportation (largely reflecting decline in railroad employment).

## Table 2-5: City of Whitefish Employment By SIC Industry (1980-2000)

| Sector | 1980 | 1990 | 2000 | Net Change 1980-2000 (# jobs/percent) |
|---|---|---|---|---|
| Agricultural, Forestry, Fisheries, Mining | 76 | 47 | 25 | (51)/-67% |
| Construction | 114 | 136 | 180 | 66/+58% |
| Manufacturing | 202 | 194 | 171 | (31)/-15% |
| Transportation | 260 | 199 | 138 | (122)/-47% |
| Communication, Other Public Utilities | 33 | 27 | 64 | 31/+93% |
| Wholesale Trade | 12 | 22 | 49 | 37/+308% |
| Retail Trade | 253 | 400 | 314 | 61/+24% |
| Finance, Insurance & Real Estate | 50 | 106 | 200 | 150/+300% |
| Business and Repair Services* | 8 | 42 | 182 | 174/NA* |
| Personal, Entertainment, & Recreation | 160 | 288 | 449 | 289/+180% |
| Professional Services | 320 | 385 | 529 | 209/+65% |
| Public Administration | 40 | 18 | 53 | 13/+32% |
| **Totals** | **1,528** | **1,864** | **2,354** | **760/+54%** |

Source: U.S. Bureau of the Census, 1980, 1990, 2000
** Business and Repair Services category changed to Professional, scientific, management, administrative and waste management services.*

The U.S. Bureau of the Census compiles an Economic Census that profiles the economy every five years, from the national to the local level. The 2002 Economic Census provides the most recent, but partial, employment data for the City of Whitefish. This data shows the five NAICS industries with the largest number of employees within the City were (in order): accommodation and food services (952 jobs); retail trade (624 jobs); health care and social assistance (475 jobs); arts, entertainment, and recreation (316 jobs); and professional, scientific, and technical services (135 jobs). Full data from the 2002 Economic Census is not released or available for Whitefish.

Whitefish has not escaped the effects of the recent economic downturn. Like the remainder of Flathead County, the Whitefish area has seen notable declines in the construction and real estate industries and felt the broad effects of less recreational travel to the area.

### 2.2.4 Population Projections

**Flathead County Population Projections.** Projections are estimates of the population for future dates. They illustrate reasonable courses of future population change based on assumptions about current or expected demographic trends. Population projections (along with forecasts of future households and employment conditions) are used to predict future travel patterns, and to analyze the potential performance capabilities of the Whitefish area transportation system.

The Montana Department of Commerce Census and Economic Information Center (CEIC) provides population projections through the year 2030 for all counties in the state. The projections available through the CEIC are developed by NPA Data Services

Inc. and presented in 5-year increments and annually adjusted based on US Census Bureau estimates of county population.

The NPA population projections for Flathead County show a continuation of significant population growth in the county over the foreseeable future and show the county's population could approach 126,000 by the year 2030. This projection suggests nearly 37,500 more people will reside in Flathead County in 2030 and represents a 42% increase in population over the 2008 estimate of population for the county (88,473).

**Population Projections for the City of Whitefish and Surrounding Area.** The City of Whitefish and its planning jurisdictional area comprise only a small portion of Flathead County. Although County level population projections are indicative of overall growth rates and trends for future population, they are not sensitive enough to the unique growth characteristics of individual municipalities or other subareas of the County.

The 2006 Resource Analysis for the City's Growth Policy presents population projections for the City of Whitefish and its planning jurisdictional area. Generally, these projections put the year 2025 City of Whitefish population at between 8,439 and 12,649 depending on the assumptions and projection methods used. The total population projected for the planning jurisdictional area in 2025 ranged from 14,065 to 23,348. A continuation of the high and low growth rates used for the Growth Policy projections shows the City's population could range from 8,800 to 14,600 residents and the City's planning jurisdictional area could have between 14,800 and 27,800 residents by the year 2030. As noted earlier, the City's population in 2008 was estimated to be 8,281.

It should be noted that projections of growth and development for the Whitefish area are based on historic trends and the community experienced an unprecedented period of growth during the 2000-2006 period. Recent economic conditions have slowed growth and development within the Whitefish area, Flathead County, and nationwide. While these conditions have and will negatively affect the rate of growth in the Whitefish area in the short-term, it is unknown how long the economic slowdown will persist. There are few applicable statistics that can be relied upon to temper population and growth forecasts at this time. For this reason, it is important to keep in mind the population projections represent what might reasonably be expected within the next 20 to 25 years and that community growth could happen at a slower (or faster) rate depending upon the many factors that influence growth.

### 2.2.5 Future Household and Employment Projections

As part of the Whitefish Transportation Plan, future housing units and retail and non-retail employment for the Whitefish planning jurisdictional area were projected and allocated for each Census Tract and Census Block to facilitate the modeling of travel demands to the year 2030. The allocations of population and employment are consistent with assumptions about future land uses and growth outlined in the Whitefish Growth Policy Update. During the development of the travel demand model employed in the

Whitefish Transportation Plan, Flathead County and Whitefish area planners, engineers, school officials, and other interested representatives met to identify areas of known planned developments and assign anticipated future growth within the community. The anticipated locations for future growth were then transferred to corresponding traffic analysis zones to facilitate travel demand modeling.

The forecasts of additional dwelling units and employment used in the Whitefish Transportation Plan and considered in the corridor study were presented to the Citizens Advisory Committee and the public for comments and input during July 2007.

The travel demand model used for the Whitefish Transportation Plan projects the number of housing units in Whitefish Planning Jurisdictional Area will increase by nearly 6,900 and more than 5,700 jobs will added by the year 2030. This represents an increase in numbers of households of about 94% over existing levels in 2003 (the base year considered by the travel demand model). Similarly, retail employment and non-retail employment in the Whitefish area were projected to increase by about 80% and 74%, respectively, by 2030.

While the downturn in the national economy in recent years has slowed growth and economic development, it is very likely that Flathead County and the City of Whitefish will remain among the state's top growth areas over the long term.

## 2.3 Environmental Setting

An environmental scan was conducted to identify environmental issues with the potential to influence the type, location, or design of improvements to US 93 considered in the corridor study and in future environmental evaluation processes under the National Environmental Policy Act (NEPA) and Montana Environmental Policy Act (MEPA). The environmental scan also documents the concerns of environmental, regulatory, and resource agencies early in the process so that these issues can be considered during the development of recommendations for highway improvements. Topics addressed in the environmental scan are listed below:

- Geology and Soils
- Important Farmlands
- Water Resources and Water Quality
- Floodplains
- Fish and Wildlife Resources
- Wildlife Species of Concern
- Threatened and Endangered Species
- Wetlands
- Air Quality
- Noise
- Hazardous Materials
- Cultural Resources
- Section 4(f) Resources
- Section 6(f) Properties
- Environmental Justice
- Utilities
- City of Whitefish Critical Areas

The major findings of the environmental scan are discussed below.

### 2.3.1 Geology and Soils

The underlying geology and surface soils in the Whitefish area pose no limitations to highway development.

### 2.3.2 Important Farmland

While several soils in the Whitefish area are classified as "Prime Farmland" or "Farmland of Statewide Importance" by the Natural Resources Conservation Service, future improvements to US 93 corridor would likely occur entirely within existing highway rights-of-way and on lands already developed or committed to urban uses. As such, the Farmland Protection Policy Act does not apply since improvements to US 93 would not convert "farmland" to nonagricultural uses.

### 2.3.3 Water Resources

The Whitefish River is the only surface water within the corridor study area that would likely be impacted by improvements to US 93. The highway currently crosses the river on Spokane Avenue and on 2nd Street west of the downtown. Another crossing of the river exists on Baker Avenue. The Whitefish River is considered an "impaired water" by the Montana Department of Environmental Quality (MDEQ) because metals and other pollutants, nutrients, and undesirable water temperature changes limit two beneficial uses of the river (aquatic life support and the cold water fishery). The MDEQ is in the process of developing Total Maximum Daily Loads (TMDLs) for pollutants in impaired waters in the Flathead-Stillwater Planning Area, including the Whitefish River.

If future corridor improvements affect surface waters, the actions would be subject to the provisions of Sections 402 and 404 of the Clean Water Act, the Montana Stream Protection Act, and other state or local laws protecting water quality. Depending on the proposed scope of corridor improvements, the following water-related permits may need to be obtained for future projects:

- "Nationwide" or Individual Section 404 Permit (U.S. Army Corps of Engineers)
- Stream Protection Act - SPA 124 Permit (Montana Fish, Wildlife & Parks)
- Short-term Water Quality Standard for Turbidity - 318 Authorization (MDEQ)
- Section 401 Certification (MDEQ)
- Exemption to Critical Areas Ordinance (City of Whitefish)

Storm water issues include storm water runoff control during and after construction. Construction projects will be subject to the requirements of the Montana Pollutant Discharge Elimination System (MPDES) General Permit for Storm Water Discharges.

The Whitefish River is considered commercially navigable from Whitefish Lake to its confluence with the Stillwater River. As such, the project sponsor would need to obtain a Land Use License or Easement from the Montana Department of Natural Resources and Conservation (DNRC) for work in or above the river.

Although areas of seasonally high groundwater may be encountered within the corridor, this condition would not be a limiting factor to improving US 93 in the City.

### 2.3.4 Floodplains

Floodplains delineated by the Federal Emergency Management Agency occur along the Whitefish River. US 93 encroaches on the floodplain of the Whitefish River at crossings on Spokane Avenue and 2nd Street west of the downtown area. Baker Avenue crosses the delineated floodplain of the river. Improvements to US 93 would likely require one or more crossings of the river and minor encroachments on its delineated floodplain. Such encroachments would be subject to local Floodplain Management regulations.

### 2.3.5 Wetlands

Wetlands within the Whitefish corridor study area exist along the Whitefish River and its tributaries. Wetlands within the existing highway corridor, delineated during project development activities for MDT highway projects, consist of narrow wetland fringes along the banks of the Whitefish River vegetated by emergent and scrub-shrub species. Impacts to delineated wetlands could occur due to the placement of minor amounts of fill associated with work at existing highway crossing structures or by building new bridges. Work in jurisdictional wetlands would be subject to the conditions associated with a "Nationwide" or Individual Section 404 Permit from the Corps of Engineers.

### 2.3.6 Biological Resources

With the exception of riparian habitat and wetlands along the Whitefish River, residential and commercial development has eliminated most natural wildlife habitat within the city limits of Whitefish. However, wetlands and riparian lands along the Whitefish River do provide locally important habitat for some migratory birds, waterfowl, small mammals, and both white-tailed and mule deer. Urban landscaping and boulevard trees provide habitat for some small mammals and song birds.

Common loons, LeConte's sparrow, olive-sided flycatchers, and bobolinks, are wildlife species of concern that may occur in the Whitefish area. Since most of these species favor lake areas and wetland habitats, improvements to the existing corridor would be expected to result in minimal impacts to these sensitive wildlife species.

Eleven fish species can be found in the Whitefish River including three species of trout and several warm water species. Modifying existing structures or building new structures on US 93 would cause minor impacts to aquatic resources due to encroachments upon and/or require work within the Whitefish River.

Information obtained from the Montana Natural Heritage Program (MNHP) reported occurrences of 11 plant species of concern in the Whitefish area although none are in the corridor study area. No plant species of concern observed during field reviews for

MDT's Whitefish-Urban and Whitefish-West reconstruction projects on US 93. From this information, the likelihood future highway improvements would affect sensitive plants appears low.

Canada thistle and spotted knapweed were commonly observed noxious weeds along the US 93 corridor in the Whitefish area along with scattered populations of ox-eye daisy, houndstongue, and orange hawkweed. Ground disturbances, such as those associated with highway construction, often present opportunities for the spread of noxious weeds.

### 2.3.7 Threatened and Endangered Species

Based on literature reviews and coordination with the U.S. Fish and Wildlife Service (USFWS), it was concluded that two threatened species—bull trout and grizzly bears—could potentially occur in the Whitefish area.

Bald eagles (formerly listed as a threatened species) may occasionally be seen foraging for fish or waterfowl along the Whitefish River or lakeshore areas. The bald eagle was officially delisted on June 28, 2007; however, the species is still protected under the federal Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The gray wolf, once listed as an endangered species, could potentially occur in the greater Whitefish area. However, the gray wolf was delisted by the USFWS in January 2009. On March 6, 2009, the Secretary of the Interior reaffirmed the decision by the USFWS to remove gray wolves from the list of threatened and endangered species in the Montana.

**Bull Trout.** Bull trout occur in Whitefish Lake and in the Whitefish River. Whitefish Lake and tributaries above the lake have been designated as critical habitat for bull trout by the USFWS. Although the Whitefish River is within bull trout range, it provides poor quality habitat for the species and is not considered critical habitat for the species. Modifying existing crossing structures or building new structures at roadway crossings may encroach upon and/or require work within the Whitefish River. Construction activities could temporarily affect bull trout habitat and there may be potential for taking an individual fish. Due to these potential adverse effects to bull trout and its habitat at US 93 crossings of the Whitefish River, formal consultation with the USFWS may be required.

**Grizzly Bears.** The City of Whitefish is located just outside the boundaries established for the Northern Continental Divide Ecosystem (NCDE), a designated grizzly bear recovery zone. Mapping information from the USFWS indicates grizzly bears could occasionally occur in Whitefish area. Improving US 93 is unlikely to result in a notable loss of habitat or cause other adverse effects to the species.

### 2.3.8 Air Quality

The only air pollutant of concern within the Whitefish area are particulates—specifically PM-10 (particulate matter ranging in size from 2.5 to 10 micrometers). The Whitefish

area was designated as a "moderate" PM-10 Non-attainment Area by the U.S. Environmental Protection Agency (EPA) in 1992. Whitefish continues to be classified as a Non-attainment Area, even though air quality standards have been met through local efforts to control PM-10.

PM-2.5 (particulate matter smaller than 2.5 micrometers) is an emerging issue in Whitefish and air quality monitoring data suggests the community may be at risk of exceeding federal standards for 24-hour PM-2.5 averages.

An air quality impact analysis must be completed during the NEPA/MEPA environmental review to demonstrate that any recommended improvements to US 93 will not cause or increase PM-10 violations within the Whitefish area. MDT and the FHWA will ultimately be required to make a conformity determination based on a regional PM-10 emissions analysis and a qualitative localized (hot-spot) PM-10 analysis for improvements to the US 93 corridor.

Although Mobile Source Air Toxics (MSATs) do not pose a major concern in Whitefish, the pollutant must be considered in a future NEPA/MEPA document for US 93 improvements.

### 2.3.9 Noise

Residences located along Spokane Avenue, 2nd Street, and Baker Avenue represent the most sensitive noise receptors in the corridor study area. Concentrations of residences exist along Spokane Avenue between 4th and 6th Streets; along the east side of Baker Avenue between 3rd and 4th Streets; along most of Baker south of the Whitefish River; and along 2nd Street west of the Whitefish River between Baker and Karrow Avenues. City park areas are present along both sides of Baker from 5th Street to the Whitefish River.

Traffic on roads and streets within the Whitefish area will likely continue to increase with or without improvements to US 93, and this would likely increase the traffic noise levels on neighboring properties. Any changes to the road system that would increase traffic volumes or move travel lanes closer to current receivers would also likely increase the traffic noise at the receivers. Such changes are most likely along the existing US 93 corridor or other new arterial connectors.

Noise modeling conducted for the Somers-Whitefish West Final EIS in 1993 predicted noise levels at numerous receptors along existing sections of US 93 and Baker Avenue would approach or exceed the Noise Abatement Criteria (NAC). The 1993 evaluation predicted that no receptors would experience a "substantial increase" in noise levels (defined as 10 dBA or greater in the Final EIS) by the project design year (2015). Although this conclusion appears reasonable, there have been no recent measurements of ambient (existing) noise levels or noise modeling using the FHWA's current Traffic Noise Model to verify if this is the case.

### 2.3.10 Hazardous Materials

During the preparation of the environmental scan for this study, on-line data bases of federal, state, and local agencies were searched for information on regulated facilities within the Whitefish area that could potentially be affected by corridor improvements.

The database search did not identify any facilities listed on the Environmental Protection Agency (EPA) Toxics Release Inventory or generators, receivers, and transporters of hazardous waste listed on the EPA's RCRA Information System (RCRIS). However, the search identified a Comprehensive Environmental Cleanup Responsibility Act (CECRA) Priority Site (State Superfund Site)—the Burlington Northern Fueling Facility—near Railway Street and Spokane Avenue at the north edge of downtown Whitefish. The site is not adjacent to US 93 and there appears to be a low potential for encountering such contamination within the existing highway right-of-way.

Databases listing identifying hazardous materials sites such as registered underground storage tank (UST) locations, leaking underground storage tank (LUST) sites, and petroleum release sites were also reviewed. This review identified 24 such sites within the corridor study area.

A Phase II Hazardous Materials Assessment was prepared for MDT's Whitefish Urban and Whitefish West project areas during 2005. The assessment identified numerous sites in the Whitefish Urban project area with documented or potential hazardous material contamination issues. These sites included locations on underground storage tank lists; observed commercial users with a moderate to high potential of using, storing or generating hazardous materials/wastes; and sites where potential concerns exist due to past and/or present land uses.

Work completed for the assessment also involved drilling and sampling to verify the extent of subsurface contamination within the highway right-of-way at several locations. Subsurface petroleum impacts were identified at the following areas along the existing US 93 corridor:

- Intersection of Spokane Avenue and 8th Street
- Intersection of Spokane Avenue and 3rd Street
- Intersection of Spokane Avenue and 2nd Street
- Intersection of Baker Avenue and 2nd Street

Contaminated sediments along the Whitefish River were identified at the existing highway culverts on Spokane Avenue, at existing bridges on 2nd Street and Baker Avenue, and in the vicinity of 7th Street where a new bridge across the Whitefish River was proposed in the US Highway 93 Somers to Whitefish West Final EIS.

A gasoline seep along the Whitefish River within the limits of the corridor study has resulted in environmental concerns regarding contaminated soils and affected water quality. Efforts are underway by MDEQ's Petroleum Release Section to assess the

problem and determine how to address the gasoline seep.

The EPA recently ordered the BNSF Railway to begin removing contaminants from the Whitefish River and work to accomplish this cleanup was initiated in September 2009. The first stage of the work focuses on removing contaminants from the BNSF Railway's upstream property boundary to the 2nd Street Bridge. The second phase would cleanup areas downstream of the bridge to JP Road. MDEQ is also reviewing a remedial investigation report from the BNSF Railway. After the remedial investigation is reviewed, a feasibility study would be conducted in preparation for a large-scale cleanup of the BNSF Railway facility which has affected groundwater and contaminated soils in the area.

### 2.3.11 Historic and Archaeological Resources

Previous cultural resources inventories of properties adjoining Spokane Avenue, 2nd Street, and Baker Avenue identified numerous historic buildings and several neighborhoods adjoining US 93 that could potentially comprise a historic residential district. The cultural resource surveys have identified 30 individual properties determined to be eligible for the National Register of Historic Places and/or contributing properties to a potential historic residential district. However, no formal boundaries for a historic residential district in Whitefish have ever been established.

Historic properties could be directly affected if improvements require expanding existing rights-of-way. Improving the existing highway could also indirectly alter the visual and aesthetic character of the areas surrounding these resources. Although improvements within the existing US 93 corridor could cause minor impacts to historic properties, it is unlikely that such improvements would jeopardize a future nomination of this possible residential historic district.

The original cultural resource survey was done in 1994 and there may be other properties that are now old enough to qualify for the National Register of Historic Places. For these reasons, the cultural resource survey will need to be updated when a project scope is developed for corridor improvements.

### 2.3.12 Section 4(f) Resources

Section 4(f) of the U.S. Department of Transportation Act of 1966, protects public parks and recreation lands, wildlife habitat, and historic sites of national, state, or local significance. Improvements to US 93 or Baker Avenue would not affect any wildlife or waterfowl refuges. However, the improvements could potentially affect several City parks, portions of the City's trail system, or historic properties.

Two City-owned parks—Riverside Park and Baker Park—could potentially be affected by improvements to US 93 or Baker Avenue within the corridor. The permanent use of land from these parks is unlikely, but reconstruction of the existing US 93 corridor or new construction on Baker Avenue could result in minor, temporary effects to these

parks during construction. Improvements to US 93 would not affect the playground at Central School.

Several existing or planned segments of the City of Whitefish's pedestrian and bicyclist trail system could be affected by improvements to US 93. In general, highway improvements should be designed and implemented to maintain the continuity of existing trails and facilitate the future development of planned trails where practicable. The FHWA has developed guidance for the applicability of Section 4(f) to trails and the statute may or may not apply depending upon the primary use and purpose of the trail and whether the trail exists on public or private land. The applicability of Section 4(f) to affected trail segments will need to be reviewed and coordinated as projects to implement corridor improvements are developed.

Reconstruction of US 93 could result in minor Section 4(f) effect at some known historic properties along Spokane Avenue, 2nd Street, or Baker Avenue that are individually eligible for the NRHP or are contributing elements to a potential historic residential district in Whitefish. An updated cultural resource survey for the corridor may also identify other properties that are now old enough to qualify for the National Register of Historic Places and subject to Section 4(f) provisions.

### 2.3.13 Section 6(f) Properties

The City of Whitefish, Flathead County, and the Montana Department of Fish, Wildlife & Parks (MDFWP) have completed ten projects in the community with funds made available through the National Land & Water Conservation Fund Act. Kay Beller City Park is the only Section 6(f) property in the corridor study area. Improvements to the Whitefish Urban corridor would not affect Kay Beller Park.

### 2.3.14 Utilities

City of Whitefish water and sewer infrastructure is extensive within the corridor study area. Municipal water and/or sewer lines exist beneath portions of Spokane Avenue, 2nd Street and Baker Avenue and cross these streets at numerous locations. Reconstruction along the existing US 93 corridor or Baker Street could conflict with municipal water or sewer lines at numerous locations.

Overhead power lines, overhead and underground telephone cables and fiber optic lines, and natural gas distribution lines cross or exist adjacent to the Spokane Avenue, 2nd Street and Baker Avenue. Some of these utilities may be in conflict with future improvements to US 93.

BNSF Railway facilities would not be affected by improvements to the US 93 corridor.

### 2.3.15 Whitefish Critical Areas

On March 3, 2008, the Whitefish City Council approved the Critical Areas Ordinance

(Ordinance No. 08-04) to regulate development in "critical areas" within the community. Under the ordinance, critical areas are defined as "a critical stormwater conveyance, stream, lake, wetland, or a slope with potential for erosion hazard or instability." The ordinance also establishes buffers (setbacks) for each type of critical area. Buffers are areas contiguous to a critical area determined to be needed for the continued functioning and/or structural stability of that critical area. The stated purposes of the ordinance are to:

- Maintain the community's ability to manage stormwater through protection of "critical conveyances."
- Protect and improve the quality of the Whitefish area's water bodies, including lakes, streams, and the Whitefish River, which are central to the community's identity and values.
- Protect public safety, public and private property, and water quality from threats of landslides and other geologic instability.
- Protect property from damage due to high groundwater levels or changes in natural groundwater levels.
- Protect and preserve the lawful use and enjoyment of private property.

The Critical Areas Ordinance sets forth standards and regulations to meet these purposes and procedures that must be followed for applicants (property owners or their agents) to document compliance with the ordinance.

Future reconstruction of US 93 through Whitefish could require encroachments or crossings of the Whitefish River and its associated riparian zone and could impact wetlands. Previous discussions in this Part have generally addressed these "critical areas." Several federal and state regulations (i.e., Sections 402 and 404 of the Clean Water Act, Montana Stream Protection Act, and Floodplain Management regulations) will apply if these "critical areas" are affected by future highway construction.

MDT <u>is not</u> exempt from compliance with the Critical Areas Ordinance and would have to follow the City's procedures if road, bridge, or trail construction encroaches on critical areas. Section 2.F of the Ordinance indicates public agencies and utilities may apply for a Reasonable Use Exception if the application of the ordinance would <u>prohibit</u> a development proposal. This section also indicates the public agency or utility is also required to demonstrate that the application of the ordinance would <u>unreasonably restrict</u> the ability to provide services to the public. Section 2.D.1 through 2.D.5 of the ordinance outlines the procedures and requirements for a Reasonable Use Exception.

Section 2.C.2 of the Critical Areas Ordinance includes an exemption for the "operation, maintenance, repair, modification, or addition to existing structures, infrastructure improvements, utilities, <u>public or private roads</u>, dikes, levees, or drainage systems, if the activity applies best management practices and does not further encroach within a critical area or buffer and there is no increased risk to life or property as a result of the action."

### 2.3.16 Summary of Environmental and Community Resources

**Figure 2-4** illustrates environmental conditions and community resources that have the potential to affect planning and decisions for improvements to the US 93 corridor through Whitefish. Conditions depicted on the figure include surface waters and floodplains, known wetlands, hazardous materials sites, public recreational lands, and historic properties.

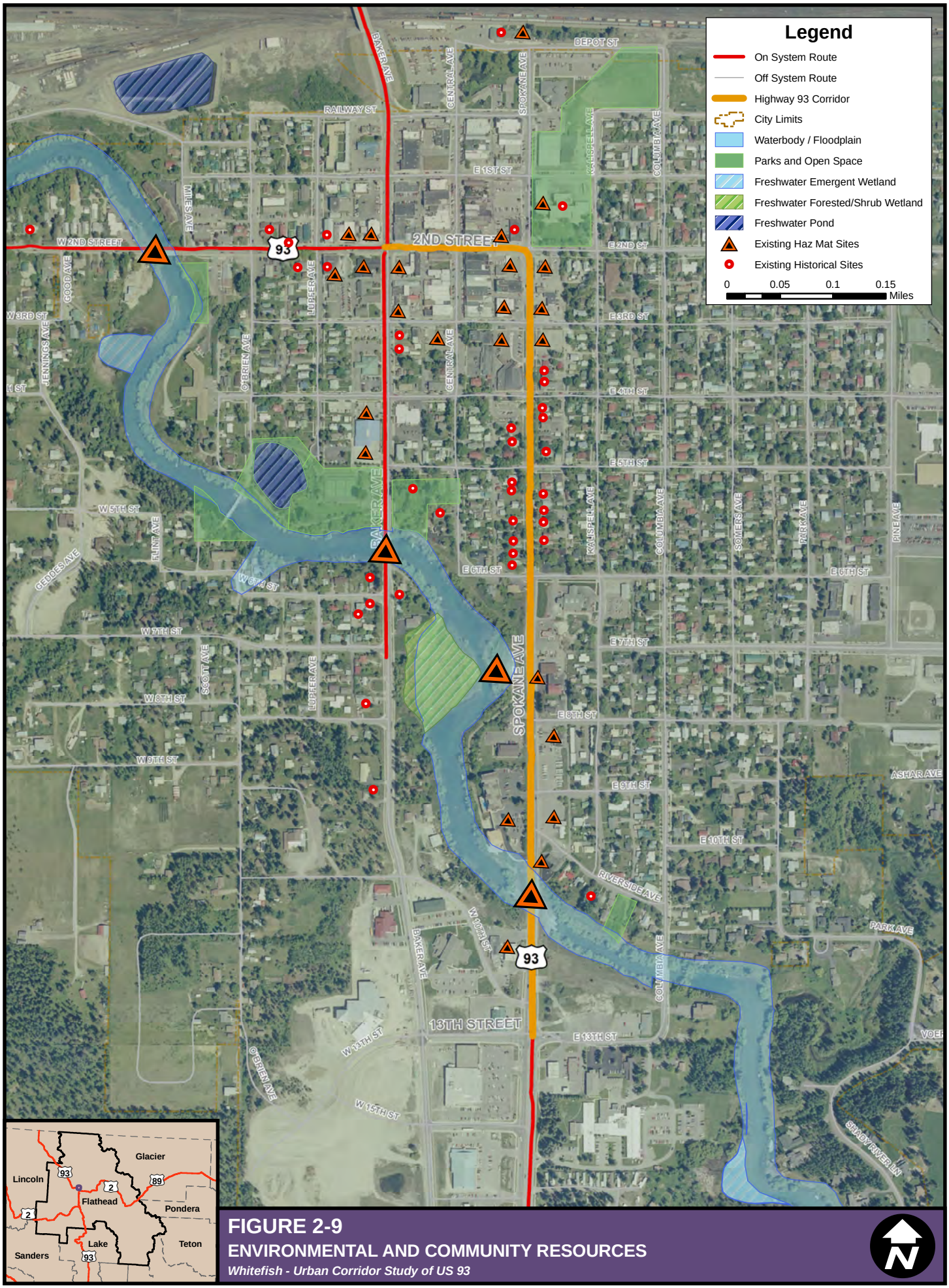



**FIGURE 2-9**

**ENVIRONMENTAL AND COMMUNITY RESOURCES**

*Whitefish - Urban Corridor Study of US 93*

# 3.0 FUTURE TRAFFIC CONDITIONS

# 3.0 FUTURE TRAFFIC CONDITIONS

This Part examines future traffic conditions in Whitefish and describes how the US 93 corridor may operate in the year 2030. Simulations and analyses based on the results of travel demand modeling for the year 2030 were used to identify future traffic conditions and potential operational concerns within the corridor. The travel demand model used for this Corridor Study was also used for the Whitefish Transportation Plan.

## 3.1 Travel Demand Forecasting in the Whitefish Area

The methods and process developed to predict growth in the Whitefish area to the year 2030 are described in detail in the Whitefish Transportation Plan and briefly summarized below. Through the use of population, employment and other socio-economic projections, the needs for the future transportation system along the US 93 corridor were defined. A model of the future (2030) street network in the Whitefish area was created to predict traffic demands based on the projected socio-economic information and changes to the transportation system likely to occur before the year 2030. The following section provides detailed information about how the future year traffic model was created.

### 3.1.1 Future Street Network

For the purposes of the corridor study, the future street network in the Whitefish area was assumed to consist of the existing system plus committed projects expected to be in place by the year 2030. The Whitefish Transportation Plan refers to this future street network as the "E+C Network." MDT's Whitefish-West project is the only "committed" transportation improvement included on the E+C Network. The Whitefish-West project extends from Reference Post (RP) 127.8 (located on 2nd Street between Baker and Lupfer Avenues) to RP 133.0 west of Whitefish and is currently in the design phase. No local improvements to the transportation network were assumed to be in place by the year 2030.

The Whitefish Transportation Plan recommends numerous and extensive improvements to the local street network including new bridges and road connections in order to help meet the anticipated traffic demands for the year 2030. Some of these recommended projects are located on routes that fall under the MDT's jurisdiction; however, most of the recommendations affect streets and roads that fall under the responsibility of either the City of Whitefish or Flathead County. There is no certainty that MDT or these local governments can or will implement all of these projects over the planning horizon. For this reason, the E+C Network presents a very "conservative" representation of the future street system in Whitefish. Modeling the E+C Network provides analysts with an indication of what future operating conditions on the local road and street network may be like without expanding the capacity on US 93 or major system improvements.

### 3.1.2 Traffic Model Development

The year 2030 was selected as the planning horizon for the future year traffic model. The model takes into account socio-economic and growth projections for the community through the allocation of new housing units and employment through the year 2030 for the Whitefish area. These allocations were consistent with the assumptions about future growth and development included in the Whitefish City-County Growth Policy.

Land use and socio-economic characteristics in the greater Whitefish area influence the traffic patterns present in the community today. To build a model to represent this condition, the housing information was collected from the 2000 Census and then updated to include housing to the year 2003, utilizing Department of Revenue data. The employment information was gathered from the Montana Department of Labor and Industry, second quarter of 2003 and was carefully scrutinized by local agency planners and MDT staff.

The roadway network/centerline information was provided by the Flathead County GIS office. This information was supplemented by input from staff from the City of Whitefish, Flathead County, and MDT. With this substantial local knowledge, the accuracy of the base model was increased.

The GIS files, population census information, and employment information are readily available and summaries of the housing and employment forecasts are presented in the Whitefish Transportation Plan. *TransCAD* software, which employs this information as input data, was used to create the traffic model. The *TransCAD* traffic model uses the input data to generate, distribute and assign traffic and project traffic volumes for the road network. These traffic volumes are then compared to actual ground counts and adjustments are made to ensure the accuracy of the model.

**It should be noted that since traffic models are based on forecasted land uses and existing travel patterns, the resulting traffic volumes are not expected to be completely accurate but only to assist in the evaluation of projected future conditions.**

To develop a transportation model, the modeling area must be established. The modeling area is, by necessity, much larger than the corridor study area. The study area for the Whitefish area traffic model is the same as the Whitefish Planning Jurisdiction Area considered in the City-County Growth Policy. Traffic generated from outlying communities or areas contributes to the traffic load within the Whitefish area, and is therefore important to accuracy of the model. Additionally, it is desirable to have a large model area for use in future projects.

The modeling area was subdivided by using census tracts and census blocks to help identify population and other socio-economic characteristics of the area. Census blocks are typically small in the downtown and existing neighborhood areas, and grow geographically larger in the less densely developed areas. The census blocks and census

tracts were used to allocate the population and employment growth anticipated to occur between now and 2030.

### 3.1.3 Traffic Simulation and Analysis

Traffic simulation software is used to determine how a roadway, intersection, or network performs under designated conditions. *Synchro* plus *SimTraffic 6 (*designed by Trafficware Ltd.) was used to simulate traffic behavior, optimize signal timings, and perform analysis throughout the specified network. For the purposes of the corridor study, the network consists of every intersection along Spokane Avenue between 13th Street and 2nd Street, every intersection along Baker Avenue between 13th Street and 2nd Street, and the intersection of Central Avenue and 2nd Street.

*Synchro* requires peak-hour turning movement volumes to be input at each intersection in the network. These turning movement volumes came from taking twelve percent (12%) of the modeled traffic volumes generated by the *TransCAD* traffic model. The geometry of the future network and of each intersection reflects the geometry in place today.

The signal timing for future conditions was determined by using the "optimize" function in *Synchro*. This feature allows *Synchro* to optimize cycle lengths, splits and offsets to determine the situation that performs at the best level for the entire network. Signal timing for existing conditions was based on current signal timing values obtained from MDT. Once the network is set up with the appropriate geometry, traffic volumes and signal timings, an analysis of the network and of each individual intersection can be done. The analysis process was also done via *Synchro*, which is capable of producing detailed reports for "Intersection Capacity Analysis" and "Measures of Effectiveness".

Information about vehicle delays and the projected future LOS for each intersection, as determined through the "Intersection Capacity Analysis", is presented later in this Part of the Corridor Study.

## 3.2 Projected Traffic Conditions (2030)

This section examines projected traffic conditions in the year 2030 on the E+C Network. The future traffic conditions for the Whitefish area were predicted through the use of the traffic model and analysis methods discussed earlier. These tools are helpful to identify future problems on the road and street network and determine possible solutions to help the network perform at a higher level.

### 3.2.1 Future Traffic Volumes and Capacity Considerations

Using the traffic model, it was possible to project traffic volumes (AADTs) on all major roads within the Whitefish study area. These roads were analyzed for the base year 2003 and for the future year 2030 to help determine how volume changes expected to

occur on the network by the year 2030 may affect traffic operations. The volumes generated by the model reflect the future year housing and employment projections.

The modeled traffic volumes on the US 93 corridor, Baker Avenue, and adjoining streets for the year 2030 can be found in **Figure 3-1**. Modeled volumes for the year 2003 were previously presented in **Figure 1-9**. Changes in modeled traffic volumes at selected locations for the years 2003 and 2030 are highlighted in **Table 3-1**.

The travel demand model projects substantial increases in traffic volumes throughout the study area by the year 2030. Model results show future traffic volumes at locations along Spokane Avenue ranging from 1.2 to 2.0 times higher than modeled volumes for 2003. Traffic volume increases along 2nd Street show future volumes that are 1.5 times higher than those for 2003. Likewise, modeling shows future traffic volumes along Baker Avenue could be about 1.3 to 1.5 times above modeled volumes for 2003. Consistent with the range of projected volume increases on Spokane Avenue in the vicinity of 13th Street, the model predicts significant increases in traffic volumes on 13th Street both east and west of Spokane by the year 2030.

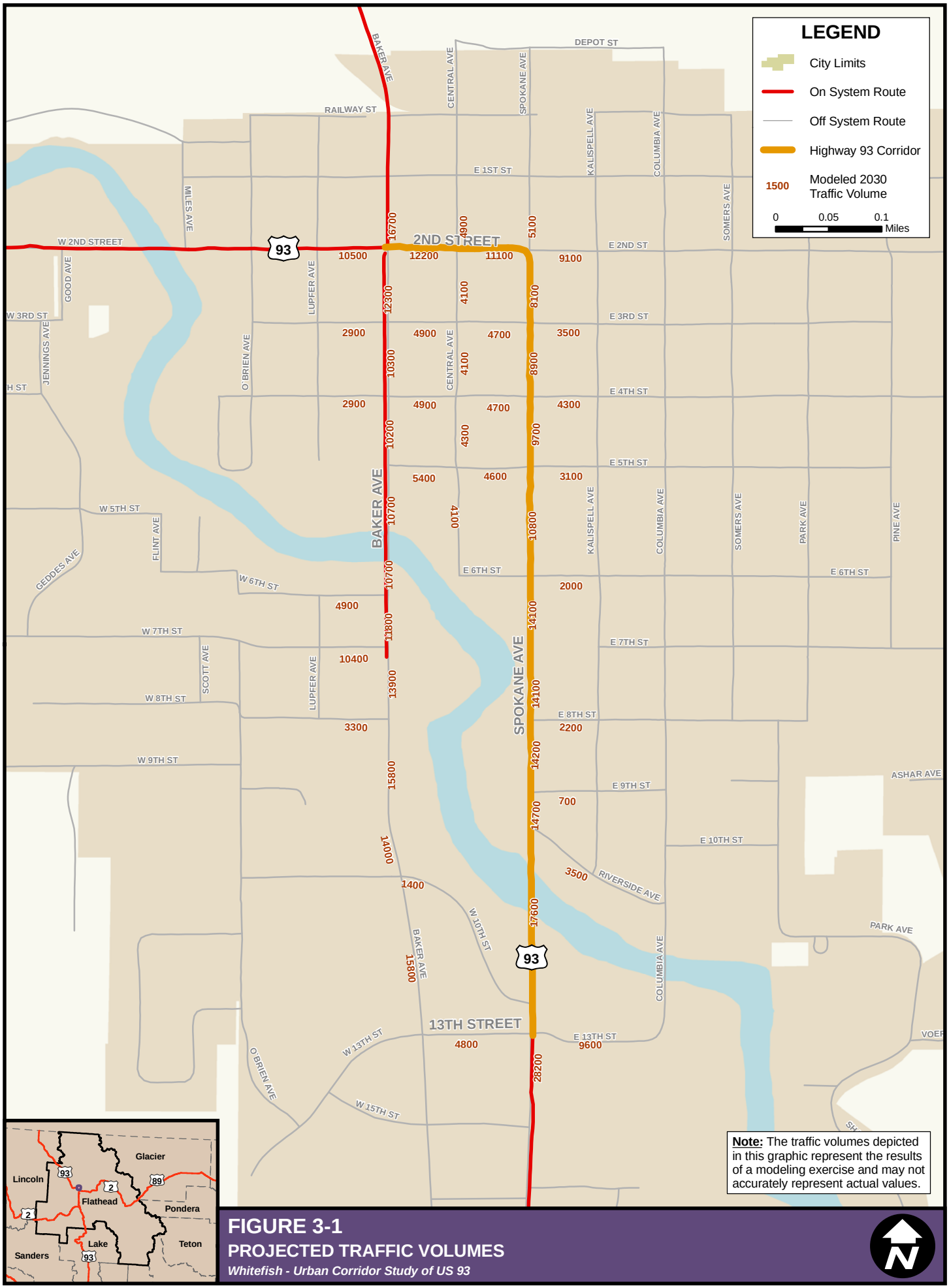
An analysis of these volumes can show how existing traffic patterns may change and help indicate where traffic problems may occur in the future. Simply put, as traffic volumes increase, vehicle flows generally deteriorate and delays increase. When traffic volumes approach and exceed the available capacity, the road begins to fail. For this reason, it is important to look at the size and configuration of corridor roadways as an indication of their ability to accommodate future traffic demands.

The number of lanes and projected daily traffic volumes can be used to help predict future roadway capacity issues. As noted in **Part 1.0**, two-lane roadways can typically accommodate up to 12,000 vehicles per day. Since Spokane Avenue, 2nd Street, and Baker Avenue are two lane facilities, this standard was used as an indicator of future capacity concerns on these roadways. The model results for the year 2030 showed the following roadway sections within the corridor with modeled AADT volumes at or near 12,000 vehicles:

- Spokane Avenue (between 13th and 6th Streets);
- 2nd Street between Central and Baker Avenues;
- The north and south approaches at the intersection of 2nd Street and Baker Avenue; and
- Baker Avenue between the Whitefish River and 13th Street.

This suggests the current two-lane roadways may be at or exceeding their capacity by the year 2030 and indicates the need for design and/or operational changes to increase their capacity.

Segments within individual roadway corridors showing volume to capacity (v/c) ratios of 0.8 or higher are of concern because this limitation on road capacity leads to congestion. Ratios of 1.0 or more suggest the road is beyond its ability to accommodate







**Note:** The traffic volumes depicted in this graphic represent the results of a modeling exercise and may not accurately represent actual values.

# FIGURE 3-1
## PROJECTED TRAFFIC VOLUMES
*Whitefish - Urban Corridor Study of US 93*

traffic flows. As previously discussed in **Part 1.0**, most of Spokane Avenue between Riverside Avenue and 2nd Street currently has v/c ratios ranging from about 0.80 to more than 1.0. Similarly, portions of Baker Avenue north of 2nd Street and between 6th and 13th Streets have v/c ratios that suggest the roadway is currently approaching its capacity.

Since numerous roadway segments of US 93 and Baker Avenue already operate at or near their capacities, it is apparent that the ability of these roadways to accommodate traffic flows would continue to decrease as traffic volumes increase in the future.

## Table 3-1: Current and Future Modeled Traffic Volumes on US 93 and Baker Avenue

| Location | Current/Future Modeled Traffic Volumes | | 2030 Volume As Compared to 2003 Volume |
|---|---|---|---|
| | 2003 Volume | 2030 Volume | |
| **Spokane Avenue** | | | |
| South of 13th Street | 13700 | 28200 | 2.0 times higher |
| North of 13th Street | 10900 | 17600 | 1.6 times higher |
| South of 6th Street | 10400 | 14100 | 1.4 times higher |
| Between 6th and 5th Streets | 8700 | 10800 | 1.2 times higher |
| Between 4th and 3rd Streets | 7300 | 8900 | 1.2 times higher |
| South of 2nd Street | 6400 | 8100 | 1.3 times higher |
| North of 2nd Street | 3400 | 5100 | 1.5 times higher |
| **2nd Street** | | | |
| East of Spokane Ave | 6200 | 9100 | 1.5 times higher |
| West of Spokane Ave | 7600 | 11100 | 1.5 times higher |
| West of Central Ave | 7900 | 12200 | 1.5 times higher |
| West of Baker Ave | 9600 | 10500 | 1.1 times higher |
| **Baker Avenue** | | | |
| North of 2nd Street | 12500 | 16700 | 1.3 times higher |
| South of 2nd Street | 9100 | 12300 | 1.3 times higher |
| Between 5th Street and WF River | 8000 | 10700 | 1.3 times higher |
| Between 7th and 8th Streets | 10600 | 13900 | 1.3 times higher |
| North of 10th Street | 10100 | 14000 | 1.4 times higher |
| Between 10th and 13th Streets | 10400 | 15800 | 1.5 times higher |
| South of 13th Street | 8500 | 12500 | 1.5 times higher |
| **Central Avenue** | | | |
| North of 2nd Street | 2600 | 4900 | 1.9 times higher |
| South of 2nd Street | 2100 | 4100 | 1.9 times higher |
| **13th Street** | | | |
| West of Spokane Ave | 2100 | 4800 | 2.3 times higher |
| East of Spokane Ave | 2000 | 9600 | 4.8 times higher |

### 3.2.2 Future Level of Service at Corridor Intersections

As noted in **Part 1.0** of this study, urban road systems are ultimately controlled by the operation of their major intersections. Intersection failures reduce the number of vehicles that can be accommodated during peak travel hours at specific locations and lessen a roadway corridor's overall traffic volume capacity each day.

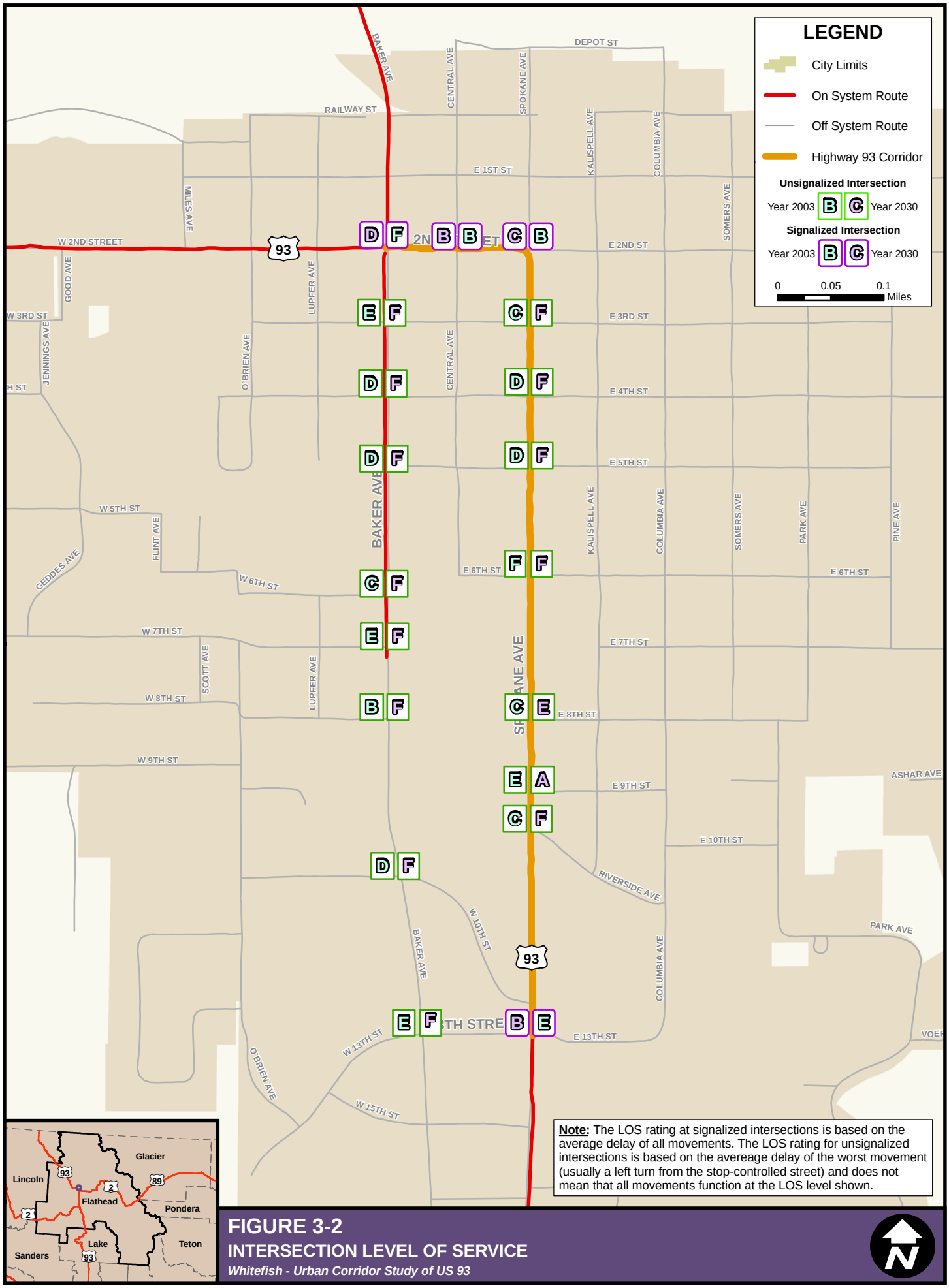
Each intersection along the US 93 corridor and along Baker Avenue between 2nd and 13th Streets was analyzed using the procedures outlined in the Transportation Research Board's Highway Capacity Manual – Special Report 209. The analyses were conducted using *Synchro* plus *SimTraffic 6* software and projected traffic data for corridor intersections generated by the traffic model.

The existing (2003) and future (2030) peak hour LOS for the signalized and unsignalized intersections along the US 93 corridor and on Baker Avenue are shown on **Figure 3-2**. The peak hour traffic volumes at each intersection were estimated from the results of traffic model for current and future conditions. Existing signal timings were used to analyze existing conditions. Optimal signal timing was applied to each signalized intersection in the future (2030) analysis to obtain the traffic conditions at that location.

**Figure 3-2** shows that without improvements, the peak hour LOS at most signalized intersections on Spokane Avenue may progressively worsen as traffic volumes increase. By the year 2030, the signalized intersections at Spokane Avenue and 13th and at 2nd Street and Baker Avenue may operate at LOS E or F, respectively, during the peak hour.

By the year 2030, almost all unsignalized intersections along Spokane and Baker Avenues may operate at LOS E or F during the peak hour without improvements. The poor overall peak hour LOS rating reported for unsignalized intersections is the result of at least one of the movements at each intersection operating with significant delays and does not necessarily mean that the operation of the entire intersection is poor. The poor LOS ratings at unsignalized intersections in the corridor are due to the lengthy delays that side street traffic may experience while attempting to enter or cross traffic flows on Spokane or Baker Avenues and not the result of poor operations on these major roadways. Analyses suggest Spokane and Baker Avenues would likely operate at an acceptable LOS in the peak hour through the year 2030. This is consistent with a fundamental priority to facilitate traffic flows on the arterial corridor.

At intersections along Spokane and Baker Avenues with stop-controlled side streets, the LOS analyses showed the "critical" movements that would likely experience lengthy delays include: through movements from minor street approaches; left turns from minor street approaches onto the major street; and left turns from the major street onto the minor street. Few gaps in traffic flows would be available on Spokane and Baker Avenues to accommodate these movements due to projected high volumes during peak hours. This condition would likely result in delays for motorists attempting to enter or cross traffic flows on these streets. The LOS analyses often predicted lengthy vehicle delays. Typical strategies to address long delays for minor street traffic involve




**Note:** The LOS rating at signalized intersections is based on the average delay of all movements. The LOS rating for unsignalized intersections is based on the avereage delay of the worst movement (usually a left turn from the stop-controlled street) and does not mean that all movements function at the LOS level shown.

**FIGURE 3-2**

**INTERSECTION LEVEL OF SERVICE**

*Whitefish - Urban Corridor Study of US 93*

prohibiting some of the minor street movements or installing a traffic signal at the intersection if warranted.

Please note that the "improved" LOS at the intersection of Spokane Avenue and 9th Street by the year 2030 is a peculiarity of the travel demand model and likely the result of little or no turning movements being assigned to the existing side street approach. There is no reason to believe this side street approach would operate any differently than other nearby intersections during peak hour conditions.

Highway capacity analyses for the signalized intersections at Spokane Avenue and 2nd Street and at 2nd Street and Central Avenue predict little change in LOS ratings at these locations during peak hours in 2030. This may be due in part because the intersection analyses assumed optimized signal timing at these locations. The poor operation of the intersection at 2nd Street and Baker Avenue may also inhibit traffic flows on 2nd Street and indirectly benefit the LOS at the intersections of Central and Spokane Avenues.

## 3.3 Anticipated Future Operational Deficiencies

This section identifies future operational deficiencies on the US 93 corridor. In general, increasing traffic volumes, inadequate intersection or road geometries, and poor traffic flows will contribute to deteriorating traffic operations within the corridor. Based on projected travel demands and the assumption that no major improvements are implemented to address such demands, the most apparent future deficiencies corridor will be:

- Lengthy delays for side street traffic attempting to enter or cross Spokane and Baker Avenues;
- Deteriorating LOS at the signalized intersections of Spokane Avenue and 13th Street and 2nd Street and Baker Avenue; and
- The continued inability for the intersection of 2nd Street and Baker Avenue to adequately accommodate all turning movements by large trucks.

Failure resulting from inadequate roadway and intersection capacity may result in traffic congestion and poor network performance. Traffic volumes that exceed or approach capacity levels cause increased vehicle delays along the roadway and on side streets resulting in lower LOS ratings.

As **Figure 3-2** shows, decreases in LOS are anticipated at most intersections along Spokane and Baker Avenues during peak hours by the year 2030. This is most prevalent at unsignalized intersections where the high anticipated volumes of two-way traffic on these roadways may severely inhibit side street movements during peak hours in the future. It is important to recognize that the LOS for unsignalized intersections is based on the average delay of the worst movement (usually a left turn from the stop-controlled street). Therefore, the poor LOS ratings predicted for the unsignalized intersections are

the result of delays for side street traffic and not due to poor traffic flows on Spokane or Baker Avenues.

By optimizing the signal timing along the corridor, all signalized intersections would be expected to perform at a LOS of "C" or higher in the year 2030, with the exception being the intersection of 2nd Street and Baker Avenue which would operate at LOS F. The poor performance of this intersection is due to the projected high traffic volumes at the location, the lack of designated turn lanes on the east and west approaches, and not having protected phases for turning movements during each cycle of the traffic signal.

Truck traffic along the US 93 corridor periodically inhibits traffic flows and affects the operation of intersections in the downtown area. Several intersections in the downtown are difficult for large trucks to negotiate due to inadequate corner radii and existing intersection geometry. Large trucks (particularly tractor-trailer combinations) often encroach on other lanes while making turns from US 93. These vehicles can also inhibit through traffic flows on US 93 as operators wait to make left turns onto intersecting streets. Due to the short distance between traffic signals along 2nd Street, fewer vehicles are able to queue at intersections when numerous large trucks are present in the traffic stream. These conditions contribute to congestion during peak travel periods and sometimes pose safety concerns in the downtown.

# 4.0 CORRIDOR ISSUES, VISION AND GOALS

# 4.0 CORRIDOR NEEDS, VISION, AND GOALS

This portion of the study describes issues associated with the US 93 corridor through Whitefish that have been identified through previous planning efforts within the community. These issues are indicative of the reasons why improvements are needed within the corridor. An overall vision and a set of goals were drafted to help identify and evaluate infrastructure improvement options for the corridor based on the identified needs. The corridor vision and goals are examined for consistency with the purpose and need for improving the US 93 corridor developed for the U.S. Highway 93 Somers-Whitefish West Final EIS.

## 4.1 Identification of Corridor Issues

Input on issues associated with the reconstruction of US 93 through Whitefish and general transportation concerns have been received from agencies and the public through a variety of past projects conducted in the community. These projects include:

- U.S. Highway 93 Somers-Whitefish West Final EIS/ROD (1993/1995)
- MDT Whitefish Urban and Whitefish West Design Projects (2005/Ongoing)
- Whitefish Downtown Business District Master Plan (2005/2006)
- Whitefish City-County Growth Policy (2006/2007)
- Whitefish Transportation Plan (2010)

While each of these projects had a specific focus, the public input, analyses, and recommendations generated during these planning efforts collectively provides an extensive amount of information directly relevant to this study. The Corridor Study acknowledges these past projects and uses them to help identify appropriate and effective improvements for the corridor.

The issues and comments identified through previous projects and community planning efforts were thoroughly reviewed by the consultant team. Since many of the issues and comments are closely related, they were combined to generate a set of statements reflecting corridor needs that can be used to develop an overall vision and goals for the corridor. The issue statements below were presented to the public and to the Citizens Advisory Committee during the development of this study.

***Traffic Operations***

Traffic circulation problems and congestion exists along US 93 through downtown Whitefish. The lack of appropriate dedicated turn lanes on 2nd Street at the intersections Spokane and Baker Avenue is a key factor contributing to congestion. The lack of east-west and north-south road connections within the community affects the efficiency of the local transportation system.

| | |
|---|---|
| ***Trucks in Downtown Whitefish*** | Truck traffic on US 93 (including construction vehicles serving new developments) is a concern in Whitefish and affects safety, environment, and downtown image. The design for US 93 should attempt to mitigate that traffic through the community to the extent practicable. However, US 93 is part of the National Highway System and trucks cannot be prevented from using this public facility. |
| ***Safety*** | Existing street configurations and development patterns, high traffic volumes, and driveway accesses along the US 93 corridor contribute to safety concerns for motorists, pedestrians and bicyclists within the community. |
| ***Parking*** | Improvements to US 93 could impact the availability of on-street parking in the downtown. |
| ***Potential Environmental Effects*** | The community values the environment and recognizes it is one of the factors that helps make Whitefish unique. Corridor improvements have the potential to affect the natural environment, most notably at highway crossings of the Whitefish River. Improving US 93 also has the potential to affect historic properties, a potential historic residential district, and involve sites with hazardous materials concerns. |
| ***Land Use/Growth*** | The Whitefish area has grown at a rapid pace in recent years resulting in notable changes to existing and planned land uses in the community. Transportation improvements must be adaptable and flexible to accommodate future growth in the Whitefish area and consider recommendations from local plans. |
| ***Community Character*** | Preserving the character and "small town feel" is essential to Whitefish's economic vitality and quality of life. Landscaping and streetscape enhancements are desirable elements of corridor improvements. |
| ***Alternate Transportation*** | Pedestrian and bicycle facilities are an essential and desirable element of the local transportation system. The community has also expressed an interest in expanded transit opportunities and services in Whitefish. |

## 4.2 Corridor Needs

The comments received and relevant technical analyses from past projects in Whitefish were reviewed to help establish the "needs" to be addressed by improving the US 93 corridor. These corridor needs are summarized on the following pages.

### 4.2.1 Address Traffic Congestion and Capacity Concerns

There is a need to address existing and projected peak period traffic congestion resulting from inadequate highway capacity and/or operational problems at key intersections like 2nd Street and Baker Avenue. One of the principal reasons for considering improvements to US 93 through Whitefish is to provide for and maintain the efficient movement of traffic. To accomplish this, the facility must be designed to handle existing and future traffic at an acceptable Level of Service (LOS). MDT's operating standards identify LOS C as acceptable and LOS B as a desirable service level. As noted earlier, LOS D and E suggest deteriorating operating conditions and increased delays. LOS F represents conditions where significant vehicle delays and congestion occur.

Traffic congestion is often seen in Whitefish during morning and evening peak hours, specifically at several major intersections on Spokane Avenue, 2nd Street, and Baker Avenue and adjoining side streets. Analyses performed for the Whitefish Transportation Plan and this study indicated the following:

- Currently, one or more approaches at the signalized intersections of Spokane Avenue and 13th Street, Spokane Avenue and 2nd Street, and 2nd Street and Baker Avenue operate at LOS D, E or F during the AM and/or PM peak hours. Overall, the intersections of Spokane Avenue and 2nd Street and 2nd Street and Baker Avenue operate at LOS F and E, respectively, during the PM peak hour.

- By the year 2030, the signalized intersections at Spokane Avenue and 13th and at 2nd Street and Baker Avenue may operate at LOS E or F, respectively, during the peak hour.

- Two unsignalized intersections along Spokane Avenue and Baker Avenue currently operate at LOS D during peak hours due to the delays experienced by motorists on the side streets. While traffic flows on Spokane and Baker Avenues operate acceptably, the high volumes of two-way traffic on these routes make left turns or through movements from these side streets difficult during peak hours.

- The LOS analyses based on the results of the travel demand model, suggest unsignalized intersections along Spokane and Baker Avenues between 13th Street and 2nd Street would function at an undesirable LOS by the year 2030. As noted previously, while the mainline roadways may function acceptably, the overall LOS ratings for the unsignalized intersections are reduced because of the vehicle delays experienced on side street approaches.

- Travel demand modeling for current traffic conditions suggests that Spokane Avenue (between Riverside Avenue and 1st Street), 2nd Street (west of Baker Avenue), Baker Avenue (north of 2nd Street and between 6th and 13th Streets) may be approaching or exceeding their capacity. Approaching or exceeding capacity suggests poor operating conditions on these roadways.

- Without capacity improvements, the majority of Spokane Avenue between 13th Street and 2nd Street, 2nd Street west of Baker Avenue, and most of Baker Avenue south of the Whitefish River would approach or exceed their capacities by 2030.

Future improvements to US 93 need to provide for improved traffic flow in anticipation of future community growth. The Whitefish Transportation Plan recognizes that the road and street network in Whitefish lacks continuous parallel collectors and streets that provide east-west connectivity across the City. As a result, motorists have few options other than using US 93 for travel through the community and congestion often occurs during peak hours.

### 4.2.2 Address Geometric or Design Concerns

Lane widths, shoulders, and parking areas along Spokane Avenue and 2nd Street are generally adequate and comply with the geometric design criteria for urban principal arterials identified in MDT's Road Design Manual. However, portions of the facility have poor lane continuity, some intersections lack beneficial turn lanes or cannot adequately accommodate all truck movements, and some turn lanes have insufficient capacity. Addressing these needs can help relieve traffic congestion and better manage traffic flows through Whitefish.

The intersection of 2nd Street and Baker Avenue performs poorly due to the insufficient intersection geometry and traffic signalization compounded with the high traffic volumes using this intersection. A lack of designated turn lanes for eastbound and westbound traffic, along with no protected turning movements, causes this intersection to have problems. Additionally, the existing configuration of the intersection does not accommodate right turns by westbound large trucks making right turns at 2nd Street and Baker Avenue. Trucks often must wait until the opposing lane clears to make the right turn causing delays at the intersection. This deficient geometric layout is supported further by two reported fixed object collisions with light standards at this intersection during a recent 3-year study period.

### 4.2.3 Enhance Traffic Safety

As noted earlier in this study, almost 87% of the reported crashes on Spokane Avenue and 2nd Street during the three-year study period were attributed to intersections along the corridor. Three intersections had more than 10 recorded crashes during the study period—Spokane Avenue and 13th Street (17 crashes), Spokane Avenue and 2nd Street (11 crashes), and 2nd Street and Baker Avenue (14 crashes).

All but 10 of the reported crashes along Spokane Avenue and 2nd Street during the study period involved two or more vehicles with the most common crashes being rear-end collisions, right-turn/angle collisions, sideswipe collisions and left turn collisions (8%). The overall safety performance of the corridor should improve if the future design addresses the causes of traffic congestion along the corridor.

The U.S. Highway 93 Somers-Whitefish West FEIS suggests a high number of driveway access points exist along Highway 93 corridor in Whitefish. Although this portion of the corridor does not include a high concentration of driveway approaches, such access points often contribute to conflicts between through and turning traffic. Future improvements to Spokane Avenue and 2nd Street should identify opportunities to combine or restructure approaches to help minimize traffic conflicts and enhance safety where practicable.

### 4.2.4 Improve Traffic Flows for Trucks

There is a need to identify ways to improve the flow of large trucks passing through Whitefish on the US 93 corridor. Large commercial vehicles on US 93 adversely affect traffic operations, contribute to congestion along 2nd Street, present safety concerns, and are inconsistent with community desires for the downtown expressed in local plans. Truck traffic is comprised both of large commercial vehicles (tractor-trailer combinations including chip and log trucks) passing through the community and smaller commercial vehicles serving businesses and new construction in the Whitefish area.

The presence of substantial numbers of trucks inhibits traffic flows on US 93 and affects traffic operations at signalized intersections in the downtown area. The sheer size of the trucks coupled with the short queuing distances between intersections creates congestion problems along 2nd Street. As previously noted, the intersections at 2nd Street and Spokane Avenue and 2nd Street and Baker Avenue do not accommodate all movements by large trucks.

Past input from the US Highway 93 Citizens Working Group (CWG) suggests design improvements for the corridor should attempt to redirect or reduce truck traffic through downtown Whitefish to the extent practicable. However, since US 93 is on the National Highway System, trucks cannot be prevented from using this public roadway.

### 4.2.5 Improve the Physical Condition of US 93 through Whitefish

Much of US 93 in the corridor was constructed in 1939, and received an overlay with seal and cover in 1979. Pavement maintenance and other activities are routinely completed by MDT to preserve the facility.

While the existing highway has been well maintained, most of Spokane Avenue and 2nd Street within the corridor are nearly 50 years old and key infrastructure components need upgrading. For example, the traffic signals along 2nd Street are old and should be

upgraded with equipment that can provide for varied phasing/timing schemes and protected left turns at appropriate locations.

### 4.2.6 Develop Fundable and Implementable Improvements

As managers of public funds, both the MDT and the FHWA have the obligation to build and maintain facilities in a financially prudent manner. That is, the dollars expended to both maintain existing facilities and build new ones should accomplish the states' transportation goals in a cost-effective manner.

MDT should be able to realistically implement recommended corridor improvements. This means projects should be practical, generally fit within available right-of-way and meet environmental regulations. Improvements should meet MDT Standards, Policies and Procedures. Improvement options would also need to be conducive to staged construction (to meet available transportation funds) and be able to address the short-term needs as well as long-term needs of the corridor. Staged construction could also minimize disruptions and street closures to traffic.

Some level of local funding may also be needed to implement corridor improvements. MDT has worked cooperatively with other Montana communities to provide specific or unique design treatments along state-maintained roadways. Considering the type of improvements and design recommendations presented in local plans, it should be recognized that local funding contributions may be required to help pay for the proposed improvements within the corridor.

In January 2008, the FHWA issued guidance regarding planning and environmental document approvals given the current fiscal realities of funding for transportation improvements. The FHWA's guidance clarifies the statutory and regulatory planning and (air quality) conformity requirements that must be met for a proposed project prior to FHWA issuing its environmental approval for the project. This has relevance to the Whitefish Urban corridor since improvements to US 93 were previously identified through an EIS process. Improvements recommended as a result of the corridor study must be evaluated and approved through a future National Environmental Policy Act (NEPA) and Montana Environmental Policy Act (MEPA) process (such as a Reevaluation of the Final EIS or a Supplemental EIS for the Whitefish Urban project area).

The FHWA's guidance indicates that before FHWA can issue an environmental approval for a <u>regionally significant project</u>, the proposed project or project phase (e.g., preliminary engineering, final design, right-of-way, utility relocation, or construction) must come from an approved, <u>financially constrained</u> Statewide Transportation Improvement Plan (STIP).

**Regionally significant projects** include projects on a facility which serves regional transportation needs and typically includes principal arterial highways like US 93. The

FHWA provided guidance to MDT on July 17, 2008 to help identify the characteristics of regionally significant projects. In Montana's rural areas, outside of Metropolitan Planning Organization (MPO) planning boundaries, regionally significant projects include all projects on principal arterial highways that add potential capacity or significantly change the highway's operational characteristics. The guidance indicates the most common types of highway improvements (such as projects involving pavement preservation, minor/major rehabilitation, reconstruction on or paralleling the existing alignment without adding lanes, safety improvements, and new or revised intersection control or configuration) are not regionally significant. A copy of FHWA's July 17, 2008 guidance letter to MDT can be found in **APPENDIX B**.

The term **financially constrained** means that projects can be implemented with current or proposed revenue sources without affecting the operation and maintenance of the transportation system as a whole. Montana, along with other states, must develop a STIP showing priority transportation projects to be undertaken during the period covered by the STIP (at least 3 years). FHWA's July 17, 2008 guidance to MDT outlines requirements for developing funding plans, agency approvals for final NEPA decision documents, and procedures for including regionally significant and non-regionally significant projects on the STIP.

Whitefish is considered to be a Rural/non-MPO Area, so FHWA and MDT will need to review the scope of any proposed changes to US 93 and determine if the proposed improvements meet the regionally significant definition. The FHWA fiscal restraint guidance means that MDT must ensure that future improvements to the corridor are duly considered in the STIP and that adequate and viable revenue sources are available to implement a reconstruction project or individual phases of such a project. Given the current funding situation for transportation improvements in Montana, it is unlikely that all funding needed to implement corridor improvement will be available at the conclusion of a future NEPA/MEPA process. For this reason, a logical phased approach to implementing corridor improvements will likely be necessary. Logical project phasing, if appropriate, will need to be identified.

### 4.2.7 Avoid or Minimize Adverse Environmental Effects

Recent Whitefish planning efforts and associated citizen input indicate broad community support for environmental protection and the recognition that natural resources comprise one of the community's greatest assets. The City's Growth Policy advocates protecting natural areas and traditional neighborhoods and avoiding development that is out of scale with its surroundings as ways to help preserve "community character."

As noted in **Part 2.0**, future reconstruction of US 93 could require encroachments on or crossings of the Whitefish River and could impact associated wetlands. Improvements within the existing US 93 corridor could also affect historic properties in some neighborhoods adjacent to the highway.

With this in mind, future improvements to US 93 need to be designed in a manner that is sensitive to adjoining lands and that attempt to avoid or minimize adverse effects on environmental features important within the community. Compliance with relevant federal, state, and local regulations will help ensure that projects are developed with adequate environmental protection measures.

### 4.2.8 Consider Local Plans

Current land uses and future development within the corridor are guided by the Whitefish City-County Growth Policy and recommendations from the Whitefish Downtown Business District Master Plan. These documents have been adopted by the City of Whitefish and lay out a desired framework for how the community should develop and how the downtown core may be revitalized.

The Growth Policy was developed around identified community values and the concept of sustainability. With respect to land use and transportation planning, the Growth Policy advocates sustainable development that supports a compact growth pattern, discourages sprawl, and provides opportunities for mixed and multiple uses of land to reduce or eliminate vehicle trips. The document indicates sustainable development patterns preserve transportation choices such as walking, transit, and bicycling, as opposed to making private automobile trips the only viable transportation choice.

The Growth Policy also recommends that design and operational improvements to arterial corridors like US 93 help improve the appearance and function of adjoining land uses, preserve community character, and serve non-motorized transportation needs in a manner consistent with the City's Bicycle and Pedestrian Master Plan. The Downtown Business District Master Plan includes specific recommendations for desired design elements and enhancements to US 93 through Whitefish.

Coordination with the City will be needed during the development of future improvements for the corridor to consider local recommendations and determine how they can be addressed without adversely affecting the future operation of US 93 and impacting funding availability.

### 4.2.9 Enhance Pedestrian and Bicyclist Facilities Along US 93

Bicycle and pedestrian safety, mobility, and accessibility need to be maintained or improved as part of the surface improvements to US 93 through Whitefish. According to the City's Bicycle and Pedestrian Master Plan, Spokane Avenue and 2nd Street are designated as a proposed bike route with links to other designated bike routes and pedestrian paths. Other designated pedestrian or bicyclist trails cross or parallel US 93 within the City.

Local plans make it clear that walking and bicycling are fundamental to the community's lifestyle and viewed as an essential part of the local transportation system.

Design input from the US Highway 93 Citizens Working Group established for MDT's Whitefish West and Whitefish Urban projects suggests future improvements to the corridor should recognize the needs of various trail users and ensure planned facilities along US 93 connect with the community's current and planned trail network.

Future improvements to US 93 should include elements that help support the community's vision for non-motorized transportation and the City's planned trail network where practicable.

### 4.2.10 Consider Transit and Intermodal Transportation

Public transit services in Whitefish are currently limited and operate on a seasonal basis. However, public input received during the Whitefish Transportation Plan suggests a strong local desire to begin thinking about providing transit services and facilities suited to the unique needs of the community. Some comments also recognized the benefits for area residents and visitors provided by a transit system that makes intermodal connections with AMTRAK passenger rail facilities in Whitefish and commercial air service at Glacier Park International Airport.

Future improvements to the US 93 corridor should not preclude the provision of transit service or development of transit-related facilities in the community.

## 4.3 Corridor "Needs" Versus FEIS "Purpose and Need"

The corridor "needs" discussed earlier are important considerations for the future NEPA and MEPA process that must be undertaken by MDT and FHWA. The identified corridor needs are directly relevant to the purpose and need discussions found in environmental decision documents like the U.S. Highway 93 Somers-Whitefish West FEIS.

The purpose and need section is one of the most important parts of such documents because it establishes why the agency is proposing to invest public funds while at the same time causing environmental impacts. The project purpose and need drives the process for alternatives development, in-depth analysis, and selection of the most appropriate action. The alternatives considered in the U.S. Highway 93 Somers-Whitefish West FEIS/ROD were developed based on the following purpose and need statement (found on page 1-4 in the FEIS):

> ***The primary purpose and need for improvements to US 93 is to reduce congestion on the existing facility, provide for planned growth and development, improve safety, provide for improved intermodal facility connections and provide for enhanced scenic values.***

The purpose and need statement above reflects the overall project goals and objectives listed on pages 2-4 and 2-5 in the FEIS. The FEIS suggested that meeting the project goals

and objectives for improvements to US 93 would result in the following secondary benefits:

- Providing support to Flathead County economic development;
- Enhancing and supporting Flathead Valley visual quality;
- Accommodating travel demands associated with population and employment growth;
- Providing support to modal relationships (including pedestrian and bicycle circulation); and
- Correcting US 93 deficiencies.

A Reevaluation of the FEIS as it relates to MDT's Whitefish West project was completed during 2007. This document concluded the purpose and need for the Whitefish-West project on US 93 has not changed from that identified in the FEIS.

Since the time of the FEIS/ROD, several local land use planning efforts have been completed that have identified local desires to enhance downtown Whitefish, preserve the unique character of the community, and protect environmental features. However, the same fundamental needs identified in the FEIS—reduce congestion on US 93, improve safety, accommodate planned growth and development, improve intermodal connections, and provide visual enhancements—still exist within the Whitefish Urban corridor. For this reason, the original FEIS purpose and need statement still remains valid for the corridor.

## 4.4 Corridor Vision

Establishing a vision and set of goals for the corridor can help guide the development of design and improvement options. The vision is a statement of the desired future for the corridor – from both a land use and a transportation perspective. The goals support the vision, and lay out desired long-range outcomes to be achieved through the corridor planning process. The vision and goals help define effective improvements and strategies for the corridor.

Developing a vision for the Whitefish Urban corridor involved several steps, including a thorough review of the issues and public comments received during previous projects and community planning efforts. Additionally, system evaluations and operational reviews, travel demand modeling, and public input received as part of the Whitefish Transportation Plan helped identify future transportation needs for the corridor.

Based on this input, the following vision statement for the Whitefish Urban corridor was drafted:

> ***"The US 93 Whitefish Urban corridor serves as an important regional and local transportation link and helps support the economic, social, and recreational structure of the community. Future development of US 93 through the Whitefish***

***urban area should effectively serve personal travel and goods movement within and through the corridor and provide safe transportation facilities for residents, community visitors, and through travelers.***

***Transportation improvements should support community land use visions and plans, be adaptable to accommodate future growth, and help maintain or enhance Whitefish's unique character and quality of life. Transportation improvements should resolve site-specific operational or safety problems along the corridor and be designed and implemented in a way that protects the natural environment."***

This vision statement was reviewed by MDT and the City of Whitefish and presented to the Citizens Advisory Committee and the public during meetings for the corridor study.

### 4.4.1 Goals and Objectives to Support the Corridor Vision

Considering the vision statement above, a set of goals and associated objectives were developed to support the vision and lay out a desired long-range outcome for the US 93 corridor. While goals are more broad statements that support the vision, objectives are more focused statements of actions that may help achieve the identified goals.

The following goals and objectives were presented to the Project Oversight Committee, the Citizens Advisory Committee and the public during August 2008.

***GOAL 1:***
***CAPACITY AND TRAFFIC OPERATIONS***
*Preserve the role of US 93 as regional transportation route while ensuring its future performance and level of service as an urban principal arterial.*

***OBJECTIVES***

- Provide adequate connectivity to the regional and local transportation network.
- Provide adequate capacity and an acceptable Level of Service to the year 2030 or beyond.
- Minimize congestion and delays for vehicles at intersections.
- Provide a design that manages truck traffic through the community in a safe and efficient manner and accommodates large vehicle movements at key intersections.
- Reduce the number of driveway access points existing along the corridor where traffic conflicts are possible.
- Accommodate multimodal transportation opportunities within the corridor.

***GOAL 2:***
***SAFETY CONSIDERATIONS***
*Design improvements that provide a safe roadway and transportation environment for all facility users and those abutting the roadway.*

***OBJECTIVES***

- Provide a design that addresses conditions at identified high crash locations in the corridor.
- Provide a design that reduces opportunities for traffic conflicts within the corridor.
- Provide a design that manages truck traffic through the community in a safe and efficient manner.
- Reduce the number of driveway access points existing along the corridor where traffic conflicts are possible.
- Provide a design that presents a safe and accessible pedestrian environment for all users regardless of age or ability.
- Provide roadway design treatments to accommodate bicyclists in a safe manner consistent with guidance from the City of Whitefish's Bicycle and Pedestrian Master Plan.

***GOAL 3:***
***CONSISTENCY WITH APPLICABLE GEOMETRIC DESIGN CRITERIA***
*Ensure improvements are consistent with MDT's geometric design criteria for urban principal arterials wherever practicable.*

***OBJECTIVES***

- Eliminate deficient roadway features through the application of basic design controls and geometric design criteria appropriate for the corridor and its setting.
- Seek a design exception if the proposed corridor design includes elements which do not meet MDT geometric design criteria for urban principal arterials.

***GOAL 4:***
***AVOID OR MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS***
*Provide transportation solutions that avoid or minimize adverse impacts to the natural, cultural and social environment in the corridor where practicable.*

***OBJECTIVES***

- Avoid/Minimize impacts to wildlife or fisheries habitat , including Threatened or Endangered Species.
- Avoid/Minimize impacts to Wetlands, Waters of the US, floodplains, and City of Whitefish "critical areas."
- Ensure conformity with Air Quality standards.
- Avoid/Minimize potential Noise impacts
- Avoid/Minimize involvement with Hazardous Materials Sites.
- Avoid/Minimize effects to important cultural sites and Section 4(f) properties.
- Avoid/Minimize socio-economic impacts.
- Attempt to minimize Right-of-Way (ROW) and utilities impacts.
- Ensure reasonable access to properties adjoining the highway.

***GOAL 5:***
***FEASIBILITY/AFFORDABILITY***
*Ensure corridor improvements are feasible to implement, represent a reasonable expenditure of limited public funds, and are acceptable to the community.*

***OBJECTIVES***

- Ensure improvements are feasible to be implemented by MDT and FHWA.
- Ensure improvements can be constructed while maintaining traffic operations.
- Ensure relative construction and maintenance costs are in line with likely availability of funding.
- Ensure improvement strategy has a reasonable degree of public and political support.

***GOAL 6:***
***COMPATIBILITY WITH LOCAL PLANS AND COMMUNITY IDEALS***
*Provide transportation improvements in the corridor that are compatible with local land use and transportation plans and that are sensitive to aspects of the community valued by Whitefish's residents while maintaining mobility along the arterial.*

***OBJECTIVES***

- Design transportation improvements within the corridor to consider the recommendations made in local plans.
- Accommodate pedestrians and bicyclists in a safe manner consistent with the City of Whitefish's Bicycle and Pedestrian Master Plan.
- Attempt to balance transportation improvements with the preservation of Whitefish's unique "character" and quality of life.
- Identify opportunities to enhance the continuity of the adjoining street network and improve local mobility.
- Consider context sensitive solutions (CSS) to enhance the appearance of the corridor.

These goals and objectives will be considered in the evaluation of design and improvement options and strategies for the corridor presented later in this study.

# 5.0 IMPROVEMENT OPTIONS AND STRATEGIES CONSIDERED FOR THE CORRIDOR

# 5.0 IMPROVEMENT OPTIONS AND STRATEGIES CONSIDERED FOR THE CORRIDOR

The improvement options and transportation strategies initially considered for the US 93 corridor through Whitefish are described in this Part. The design configurations and other strategies will be evaluated through a screening process based on the goals and objectives for the corridor to ultimately help determine which ones merit further detailed study. The conceptual improvement options and strategies identified for the corridor include:

- Alternatives for the Whitefish urban area from the U.S. Highway 93 Somers to Whitefish West FEIS/ROD;
- Design options developed after the ROD during project development activities for the MDT's Whitefish Urban reconstruction project;
- Recommendations for US 93 from the Whitefish Downtown Business District Master Plan; and
- Other strategies that may potentially help relieve congestion and reduce future travel demands in the corridor.

## 5.1 Purpose for Undertaking Improvements

The purpose and need for undertaking improvements is a key factor in determining a range of actions to be considered for the US 93 corridor. **Part 4.0** discussed the purpose and need from the U.S. Highway 93 Somers-Whitefish West FEIS/ROD and concluded it remains valid with respect to improving the US 93 corridor through Whitefish. Based on the purpose and need, the improvements to US 93 should:

- Incorporate physical changes to the roadway and its adjoining environment so the facility complies with MDT's geometric design criteria for Urban Principal Arterials;
- Provide a transportation facility that meets current and future demands;
- Improve the operation and efficiency of the facility by incorporating measures to enhance traffic flows and better manage truck traffic in the corridor;
- Reduce opportunities for traffic conflicts and crashes associated with turning movements at major intersections and other corridor locations;
- Provide facility improvements that consider recommendations made in the City's Growth Policy and Downtown Business District Master Plan; and
- Ensure future improvements help maintain the character of the community by being sensitive to the surrounding natural environment and land uses.

## 5.2 Identification of Design and Improvement Options

Alternatives as defined in NEPA (40 CFR 1502.14) include a broad range of strategies from major modal alternatives and location alternatives to minor design changes that would mitigate anticipated adverse impacts. For corridor studies, alternatives typically consist of transportation system improvements and strategies that would be expected to meet established goals and objectives and address identified needs within the corridor.

The design and improvement options and transportation strategies initially considered for the corridor are discussed on the following pages.

### 5.2.1 Alternatives from the US Highway 93 Somers to Whitefish West FEIS

The U.S. Highway 93 Somers to Whitefish West FEIS considered several groups of alternatives including:

- Adding capacity to US 93 by widening Spokane Avenue and 2nd Street;
- Adding capacity to US 93 by developing a couplet configuration incorporating Spokane and Baker Avenues;
- Providing a bypass around the City;
- Improving a parallel corridor to US 93;
- Making minor improvements to existing US 93;
- Improving transit opportunities;
- Implementing measures to reduce demand for traffic to drive on US 93; and
- Making no improvements to US 93.

These alternatives were developed in detail and analyzed in the FEIS based on their responsiveness to the document's purpose and need. Ultimately, the No-Build Alternative and 6 build options were evaluated in detail in the FEIS. Alternative C (Couplet-3) was identified as the Preferred Alternative for US 93 through Whitefish in the ROD.

**Build Alternatives Considered in the FEIS.** The build alternatives for US 93 through Whitefish from the FEIS are briefly described below and schematically illustrated in **Figure 5-1**.

❖ **ALTERNATIVE A (FOUR-LANE)**
This alternative followed the existing alignment of US 93 and involved the provision of four 11-foot-wide travel lanes along Spokane Avenue and 2nd Street and intersection improvements at Spokane and 2nd. Parking would be removed along Spokane Avenue and on 2nd Street between Spokane and Baker Avenues to accommodate four travel lanes.

- **ALTERNATIVE C (COUPLET1)**
  The alternative consists of developing a one-way couplet, with Spokane Avenue providing for northbound traffic and Baker Avenue providing for southbound traffic. The alternative included upgrades to Baker Avenue and an extension of Baker Avenue to provide a connection with Spokane Avenue. 2nd Street would accommodate two-way traffic.

- **ALTERNATIVE C (COUPLET 2)**
  The alternative was the same as Couplet 1 except a new bridge across the Whitefish River would be provided to connect Spokane Avenue and Baker Avenue and improve traffic flows on the proposed one-way street network.

- **ALTERNATIVE C (COUPLET 3)**
  This alternative continues two-way traffic on Spokane Avenue to 7th Street where a one-way couplet begins on Spokane Avenue (for northbound traffic) and Baker Avenue (for southbound traffic). Like Couplet 2, this alternative provides a new bridge across the Whitefish River (at 7th Street) to link Spokane and Baker Avenues and accommodate two-way traffic.

- **ALTERNATIVE C (COUPLET 4)**
  The alternative is similar to Couplet 1. However, the one-way couplet includes a two-way section between 5th and 8th Streets on Baker Avenue and relies on 5th Street to provide a connection between Spokane and Baker Avenues.

- **ALTERNATIVE C (OFFSET)**
  The alternative splits US 93 traffic between Spokane Avenue and Baker Avenue by providing three-lane roadways to increase capacity. Spokane Avenue would have two lanes for northbound traffic and one lane for southbound vehicles. 2nd Street would be reconfigured with two westbound lanes and one eastbound lane between Spokane and Baker Avenues. Baker Avenue would be redesigned to include two southbound lanes and one northbound lane.

**Bypass Routes Considered in the FEIS.** The FEIS identified five bypass alignments for US 93 in the Whitefish area. These options, listed below, were duly considered but not advanced in the FEIS because: they failed to divert substantial amounts of traffic off Spokane Avenue and 2nd Street; had the potential for substantial environmental impacts; and they generated significant public opposition.

- **BYPASS A**
  Bypass A begins at an intersection with US 93 approximately 1.7 miles south of MT 40. Bypass A travels in a northwesterly direction and follows an existing road for the first 1.7 miles. The alignment then proceeds north through natural drainage swales to connect back with US 93.

- **BYPASS B**
  Bypass B begins at the intersection of MT 40 and US 93. The alignment would then proceed west to Blanchard Lake where a bridge would be required to cross the lake. After the bridge, the alignment would head northwest to connect back with US 93.

- **BYPASS C**
  Bypass C begins at the intersection of MT 40 and US 93. The alignment would then follow the same alignment as Alternative B for the first 1.5 miles. At this point, the alignment would then follow the eastern side of Blanchard Lake along existing power lines and eventually join US 93.

- **BYPASS D**
  Bypass D would begin at the intersection of MT 40 and US 93 and would follow the same alignment as Bypass B until it intersects with Karrow Avenue (approximately 1.4 miles). The alignment would then proceed north along Karrow to intersect with US 93.

- **BYPASS E**
  Bypass E was an extension of Whitefish Stage Road (beginning at MT 40 east of US 93) that continued north to 2nd Street east of downtown Whitefish. The route would bypass only a portion of the city and would require a new bridge across the Whitefish River.

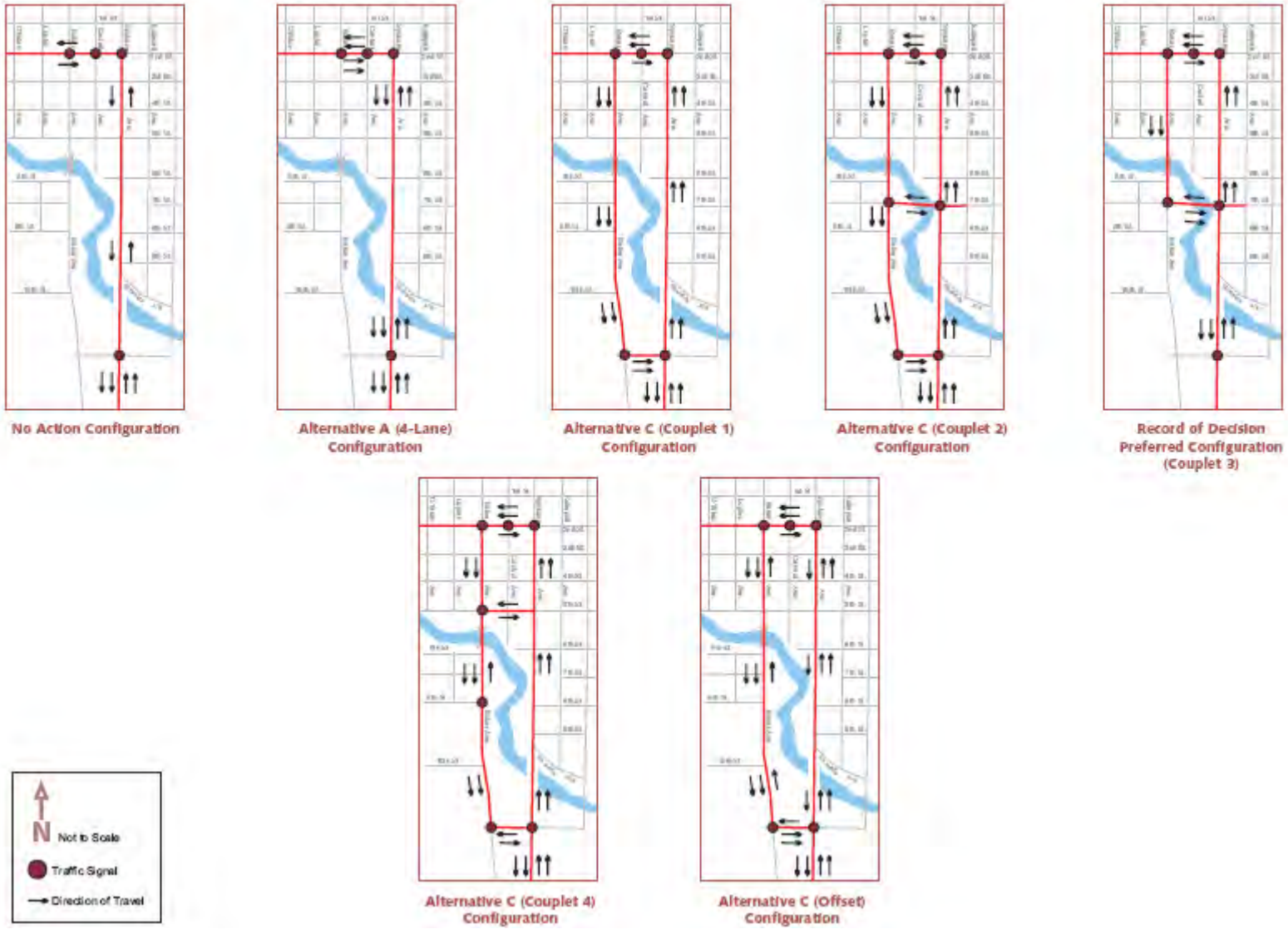
**Other Alternatives or Strategies Considered in the FEIS.** Other alternatives or strategies considered in the FEIS/ROD are described below.

- **NO ACTION**
  The No Action (or No Build) Alternative examined in the FEIS consisted of the existing US 93 cross-section with some committed improvements, and minor, short-term maintenance or safety enhancements. This alternative, schematically shown in **Figure 5-1**, was evaluated in detail in the FEIS/ROD.

- **MASS TRANSIT**
  The FEIS considered several options for mass transit in this part of the Flathead Valley including: fixed guideway facilities (light rail transit, commuter rail transit, dedicated busways, and elevated transit systems (like a monorail); improvements to existing bus systems; and high occupancy vehicle (HOV) lanes.

  Fixed guideway options were not advanced in the FEIS due to high capital and operating costs and the inability of such systems to generate enough riders to make the system financially feasible. Mass transit options were not advanced because they would not meet future travel demands on US 93 and would require substantial public subsidies to meet operating costs for an expanded bus system in the area. HOV lanes (or existing lanes designated for HOV use during peak

## FIGURE 5-1: Design Configurations from the FEIS/ROD



periods) were likely to make traffic congestion worse in existing travel lanes and would not significantly reduce travel.

- **TRANSPORTATION DEMAND MANAGEMENT (TDM)**
  TDM strategies are relatively low-cost ways of reducing travel demand and improving traffic flow during peak hours. These strategies consist of programs or policies focused on either reducing the number of vehicles on the roadway or distributing trips to less congested periods of the day.

  The FEIS considered a group of TDM options to address transportation needs in the US 93 corridor including: increased telecommuting, variable work hours, employer based carpool and vanpool programs, and parking management strategies. The FEIS did not advance any TDM strategies because they are primarily directed at commuter or other regularly occurring travel and they showed little promise to decrease travel on US 93. It was recognized that there are few large employers in Whitefish area that could effectively implement carpool or vanpool programs. The FEIS concluded TDM strategies (by themselves) would not meet the future travel demands on US 93.

- **TRANSPORTATION SYSTEM MANAGEMENT (TSM)**
  TSM projects are relatively low cost, "tune-up" type improvements designed to increase the operational efficiency and capacity of the existing street system. These strategies are typically focused on actions like modernizing or installing new traffic signals, intersection improvements (approach widening, channelization, addition of turn lanes), optimizing lane usage, removing or restricting on-street parking, and improvements to signage and lighting improvements.

  Access management can also be considered a TSM-type improvement. Access management is typically implemented to improve the safety, function, and operation of the roadway, and to ultimately provide a traffic facility that better serves both local and regional users. Access management plans often recommend measures like adding turn lanes, incorporating turning restrictions, consolidating or eliminating accesses, and implementing other measures to maintain the desired operational characteristics of the highway.

### 5.2.2 FEIS/ROD Preferred Alternative

The U.S. Highway 93 Somers to Whitefish West FEIS and ROD identified Alternative C (Couplet-3) as the Preferred Alternative for the Whitefish Urban project area. The primary design elements of Alternative C (Couplet-3) were described in the previous section. The Preferred Alternative was selected for the following reasons:

- Enhanced traffic operations and level of service when compared to other alternatives;

- Less out-of-direction travel when compared to other couplet alternatives;
- Protection of the residential character along Baker Avenue south of 7th Street;
- Enhanced circulation to Whitefish schools;
- Traffic relief on 2nd Street;
- Support for the City's development goals in the southwestern area of Whitefish; and
- Support by the Whitefish City Council.

The Preferred Alternative also included the development of Alternative A (Median) on Spokane Avenue between MT 40 and the Whitefish River when warranted by traffic volumes. With respect to the Whitefish Urban corridor, this design recommendation applies to Spokane Avenue between 13th Street and 7th Street and calls for the provision of four 12-foot-wide travel lanes, a 20-foot wide center median (a flush median is used south of 13th Street), two 8-foot-wide shoulders, and 5-foot-wide sidewalks separated from the roadway by a narrow buffer.

The FEIS described several other special design concepts associated with the Preferred Alternative including: developing a "gateway" on Spokane Avenue to formally designate an entry to the City of Whitefish; ensuring connections with planned pedestrian and bicycle facilities; providing landscaping treatments along portions of US 93; and making minor improvements to existing transportation infrastructure (including signals, lighting, signage, and removal of parking at some locations).

### 5.2.3 FEIS Alternatives and Strategies Not Warranting Consideration for the Corridor

Considering the original FEIS purpose and need statement and the overall goals for future improvements to US 93 through Whitefish listed on page 5-1, the following preliminary design options or strategies **do not** warrant further consideration in the corridor study.

**No Action.** This alternative fails to address the overall purpose and need for undertaking improvements within the Whitefish Urban corridor. The option would not change the existing facility and does nothing to address current and future travel demands.

**Bypass Alternative E.** Bypass Alternative E was dropped from consideration because it does not offer an attractive alternate route to the use of Spokane Avenue and 2nd Street. The bypass alignment, located at the eastern edge of the community, originates on MT 40 and would require that traffic use 2nd Street to proceed west on US 93 or access the northern portion of the city. The identified route would be unlikely to divert enough traffic to benefit the existing US 93 corridor.

**Columbia Avenue as a Parallel Arterial to Spokane Avenue.** Columbia Avenue, located two blocks east of Spokane Avenue, is a continuous north-south street beginning

at 13th Street. Columbia Avenue (as well as other north-south streets east of Spokane Avenue) offers little potential for development as parallel arterials to help alleviate future traffic demands on US 93. Columbia Avenue passes through some of Whitefish's older residential neighborhoods and arterial street development would be out of character with these neighborhoods. Area residents would likely be opposed to such a change.

Improving Columbia Avenue would be unlikely to attract through traffic from the existing corridor since Spokane Avenue represents a more direct travel route. Additionally, even if traffic from US 93 were drawn to such a route, there is no way for traffic headed to the north side of Whitefish to cross the BNSF Railway. As a result, vehicles would be forced to travel west on 2nd Street to Baker Avenue to use the viaduct over the railroad or east to an at-grade crossing linking 2nd Street to East Edgewood Place.

**Strict Reliance on Non-motorized Transportation Facilities.** This option would rely on pedestrian and bicyclist improvements and implementing policies to encourage non-motorized travel as a means of reducing vehicle travel on the US 93 corridor. Although this presents an admirable goal, strict reliance on non-motorized transportation to alleviate traffic congestion and meet future travel demands within the corridor is unrealistic. A literature search on this topic suggests that some 5-10% of automobile trips can reasonably be shifted to non-motorized transport in a typical urban area (i.e., highly populated metropolitan areas developed at a higher density than the City of Whitefish). This shift in travel may be increased if disincentives to driving are implemented in conjunction with a non-motorized transportation emphasis.

Future improvements to the US 93 corridor would accommodate all appropriate travel modes and be designed to make appropriate connections to the City of Whitefish's planned pedestrian and bicycle trail system.

**Incorporation of Fixed Guideway Options and HOV Lanes.** The FEIS considered several options for implementing mass transit in the Flathead Valley including: fixed guideway facilities (light rail transit, commuter rail transit, dedicated busways, and elevated transit systems (like a monorail); and high occupancy vehicle (HOV) lanes. These options were not evaluated in detail in the FEIS and have not been advanced as viable ways to address future travel demands in the greater Flathead Valley. Because these mass transit options have a "regional" scope, they are not appropriate for the limited segment of US 93 located within the City of Whitefish.

### 5.2.4 FEIS/ROD Alternatives and Strategies to be Considered

**Table 5-1** summarizes the design alternatives and other transportation strategies from the FEIS/ROD that will receive initial consideration in the corridor study.

**Table 5-1: Alternatives or Strategies from the FEIS/ROD Receiving Initial Consideration in the Corridor Study**

| Alternatives Evaluated in Detail in the FEIS/ROD | Other Strategies from the FEIS/ROD |
|---|---|
| Alternative A (Four Lane)<br>Alternative C (Couplet 1)<br>Alternative C (Couplet 2)<br>**Alternative C (Couplet 3) – FEIS/ROD PREFERRED ALTERNATIVE**<br>Alternative C (Couplet 4)<br>Alternative C (Offset) | Revisit Western Route Alternates (FEIS Bypass Alternatives A - D)<br>Revisit Transportation Demand Management (TDM)<br>Revisit Transportation System Management (TSM)<br>Revisit Transit Improvements<br>Intelligent Transportation System (ITS) Strategies |

### 5.2.5 Design Configurations Proposed After the FEIS/ROD

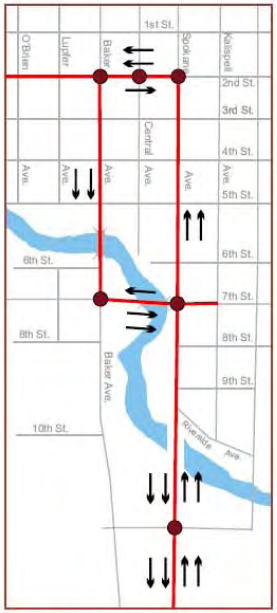
Based on the ROD for the U.S. Highway 93 Somers to Whitefish West FEIS, MDT began design work for the Whitefish Urban and Whitefish West reconstruction projects on US 93. During these design efforts, additional configurations for the US 93 corridor were developed in response to newly identified capacity and geometric needs and changed conditions in the community. These options, described briefly in the following paragraphs and illustrated in **Figure 5-2**, will be considered in this corridor study.

**Modified ROD Configuration.** MDT's design consultant completed a traffic analysis for the Whitefish Urban project that identified several capacity and geometric concerns associated with the Preferred Alternative specified in the ROD. Based on the results of a preliminary traffic analysis for the project, MDT's design consultant modified the FEIS/ROD Preferred Alternative configuration to provide for future traffic volumes and geometric needs. The modifications included the addition of appropriate auxiliary turn lanes at major intersections in the corridor and design changes to accommodate truck movements at key intersections.

**Contra-Flow and Truck Route Configurations.** Two other design concepts for the US 93 corridor—known as the Contra-Flow and Truck Route Configurations—were developed based on newly identified capacity and geometric concerns and to reflect community desires expressed in the Growth Policy and Downtown Business District Master Plan. The origin of the "contra-flow" concept was opposition to a one-way street configuration in the downtown expressed by some in the business community and the additional circulation benefits provided by such a feature. These design iterations were based on concepts included with the FEIS/ROD Preferred Alternative.

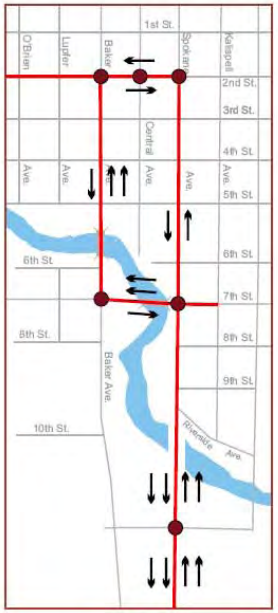
Both configurations were presented as ways to improve downtown circulation by eliminating one-way streets, provide an alternate route for trucks on Baker Avenue, and to be responsive to recommendations in the Downtown Business District Master Plan, particularly on 2nd Street where a two-lane configuration is proposed instead of a three-

## FIGURE 5-2: Design Configurations Proposed After the FEIS/ROD

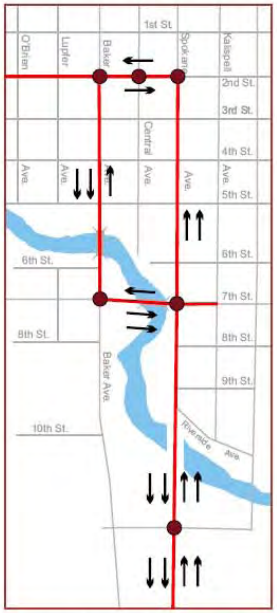



**Modified Record of Decision Configuration**

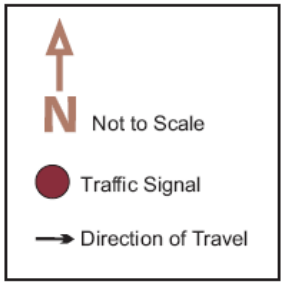
**Contra-Flow Configuration**




**Truck Route Configuration**




**Downtown Master Plan Configuration**



lane design associated with the build alternatives presented in the FEIS.

**Downtown Business District Master Plan Configuration.** The Downtown Business District Master Plan provided a recommended street configuration for Spokane Avenue, 2nd Street, and Baker Avenue. The proposed configuration incorporates a couplet concept on Spokane and Baker Avenues similar to the FEIS/ROD Preferred Alternative. However, a northbound "contra-flow" lane would be provided on Baker Avenue north of a new bridge at 7th Street and 2nd Street would be maintained as a two-lane street. The Downtown Business District Master Plan Configuration also recommends various streetscape enhancements along 2nd Street.

### 5.2.6 Consideration of Additional New Design Configurations

MDT's Whitefish Urban project generally extends from the intersection of Spokane Avenue and 13th Street to the intersection of 2nd Street and Baker Avenue. Without going substantially beyond this project area, no new or "previously undiscovered" design configurations are proposed for the Whitefish Urban corridor.

The design options previously identified encompass a broad range of concepts for addressing current and future transportation needs within the corridor by improving the existing facility or using other nearby streets. The identified design configurations also consider various ways to accommodate traffic flows within the corridor by:

- Maintaining the existing two-way traffic flows on Spokane Avenue and 2nd Street;
- Providing four-lanes on all or portions of Spokane Avenue and 2nd Street;
- Developing a "couplet" configuration to accommodate northbound and southbound on Spokane and Baker Avenues with one-way or two-way traffic configurations;
- Employing a "contra-flow" traffic circulation pattern through portions of downtown Whitefish; and
- Enhancing east-west connectivity by linking Spokane Avenue and Baker Avenue with a new bridge at 7th Street.

A fundamental consideration in the Whitefish Transportation Plan is to enhance connectivity by adding logical and beneficial east-west and north-south links to the existing road and street network. Linking Spokane and Baker Avenues at 7th Street is a logical place for a new roadway connection because 7th Street is the only east-west street that already connects Baker and Karrow Avenues and it is located about midway between 2nd and 13th Streets.

Comments heard during the development of the U.S. Highway 93 Somers to Whitefish West FEIS and the City's Growth Policy suggest that not all community members support the concept of making this connection because it would require a long and expensive bridge and cross the widest part of the Whitefish River's floodplain and

associated wetlands. Securing necessary environmental permits for a new 7th Street bridge may also be difficult if other options resulting in less impact to the river and wetland areas are viable. Other streets west of the river (6th, 8th, and 9th Streets) are discontinuous and have irregular alignments making these locations poor candidates for establishing a new connection between Spokane and Baker Avenues.

Moving trucks off Spokane Avenue and 2nd Street is a strong local desire. Several design options have already been developed that attempt to do this—notably the Truck Route Configuration and other design options that provide connections between Spokane and Baker Avenues at 7th or 13th Streets.

### 5.2.7 Off-System Improvements with Potential Benefits to the Corridor

The Whitefish Transportation Plan modeled numerous "Alternative Scenarios" to examine the effects of changes to the local street network. Modeling efforts examined the effects of extending existing routes, providing new roadway links, adding a new crossing over the BNSF Railway, adding new bridges across the Whitefish River, and providing other network improvements to enhance travel within the community. The options modeled for the Transportation Plan were typically associated with "off-system" roads—roads not on the state's Urban System or under MDT's maintenance responsibility. These off-system roads provide a supporting local road network to US 93.

While these "off-system" road improvements are not essential to the operation of US 93, they offer the potential for enhancing whatever improvements are recommended for the corridor. Locally implemented improvements may indirectly benefit traffic operations on US 93 by diverting traffic from the corridor or by offering alternate routes for travel.

In total, seventeen (17) Alternative Scenarios were test modeled as part of the work for the Whitefish Transportation Plan. **Figure 5-3** shows the Alternative Scenarios considered in the Transportation Plan. The modeling effort allowed analysts to readily identify the potential changes in traffic flows on local streets and the US 93 corridor by comparing existing modeled volumes to year 2030 projected traffic volumes on the street network. Off-system improvement options with potential benefits to traffic operations on the US 93 corridor are discussed below.

**Western Route Alternates (Alternative Scenarios AS-1 through AS-4).** These scenarios correspond to Bypass Routes A-D considered in the FEIS and provide the potential to draw some traffic away from the US 93 corridor.

**Baker Avenue Extension (Alternative Scenario AS-5).** This scenario would extend Baker Avenue south from 19th Street and provide a connection to US 93 at JP Road. This new roadway link would provide a new north-south route parallel to US 93/Spokane Avenue and serve commercial areas in the southern portion of the City.

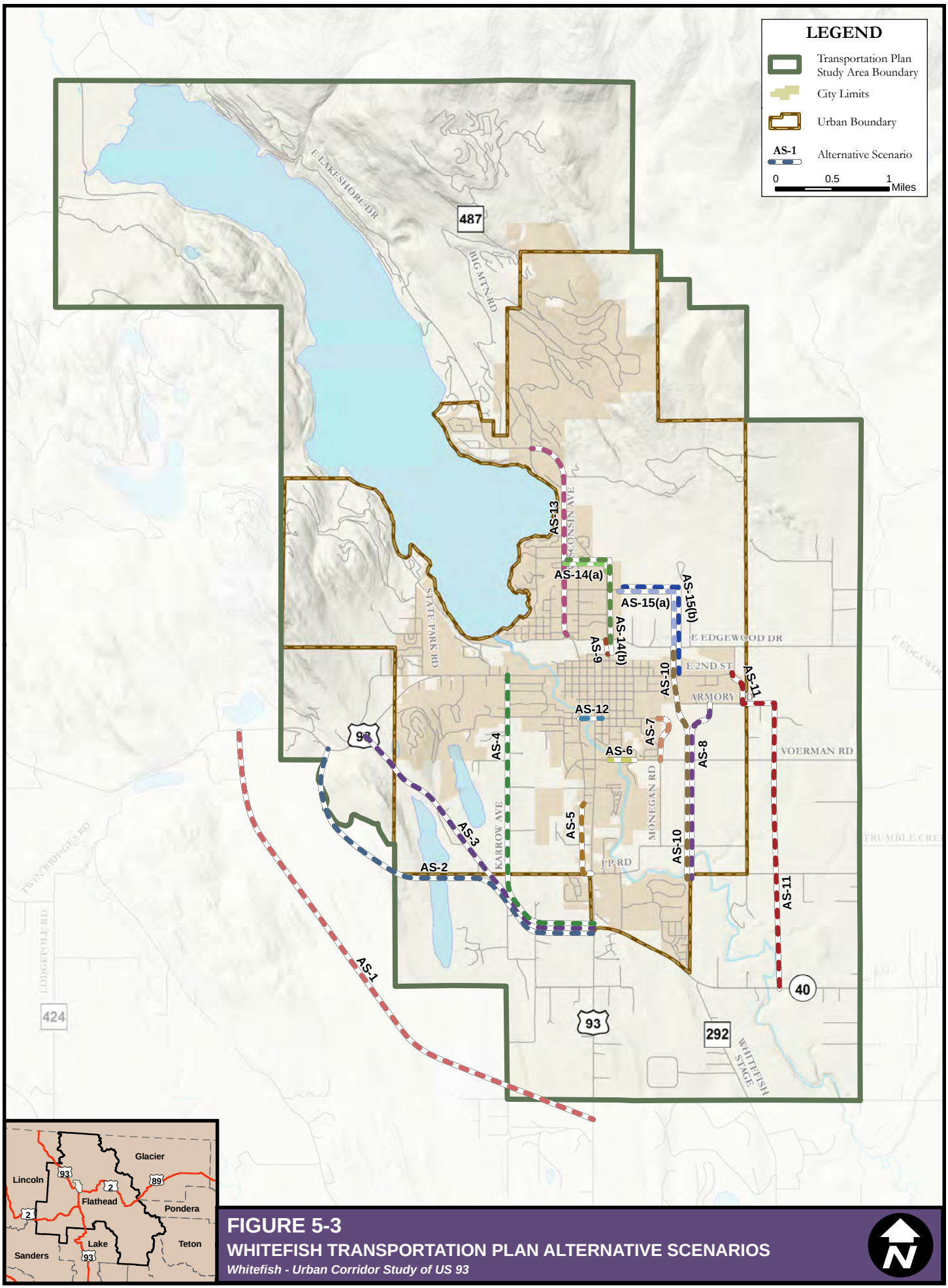



**FIGURE 5-3**

**WHITEFISH TRANSPORTATION PLAN ALTERNATIVE SCENARIOS**

*Whitefish - Urban Corridor Study of US 93*

**Texas/Columbia Avenue Railroad Crossing (Alternative Scenario AS-9).** This scenario consists of adding an elevated crossing over the BNSF Railway to connect Texas Avenue with Columbia Avenue. This improvement would make Columbia Avenue a parallel north-south route to US 93 and Baker Avenue (north of 2nd Street) and would provide another grade separated railroad crossing in the community. Traffic headed to or from destinations on the north side of Whitefish would be the primary beneficiaries of such an improvement.

**Eastside Route Alternates (Alternative Scenarios AS-8, AS-10, AS-11, AS-15a/AS-15b).** These scenarios include development of north-south road connections along the eastern perimeter of the City. The improvement would generally result in the provision of new north-south roadway corridors 1 or 2 miles east of the existing US 93 corridor, a new elevated railroad crossing, and improved access to the north side of Whitefish.

**7th Street Bridge Addition (Alternative Scenario AS-12).** This scenario involves adding a new bridge across the Whitefish River at 7th Street linking Baker and Spokane Avenues. While various FEIS alternatives included this feature, modeling for this scenario allowed the operational effects associated with adding a new bridge and enhancing this new east-west link to be tested independently from other improvements to US 93 and Baker Avenue.

**13th Street Bridge Addition (Alternative Scenario AS-6).** This scenario would add a bridge across the Whitefish River and provide a beneficial new roadway along 13th Street (east of Columbia Avenue). The improvement would facilitate east-west movements between Baker and Spokane Avenues and Voerman Road.

### 5.2.8 Intelligent Transportation Systems (ITS)

The U.S. Highway 93 Somers to Whitefish West FEIS did not identify Intelligent Transportation Systems (ITS) as a potential strategy to address some of the identified needs on US 93 through Whitefish. ITS encompasses a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion, improve safety and enhance productivity. ITS ensures facility users have broad access to all informational services needed to make and execute efficient travel and transport choices, both before and during trips. In general, ITS projects offer these overall benefits:

- Enhanced public safety;
- Reduced congestion;
- Improved access to transit and travel information;
- Cost savings to motor carriers, transit operators and government; and
- Reduced environmental impacts.

The Whitefish Transportation Plan does not identify ITS as a recommended strategy for improving transportation in the community. However, video vehicle detection coupled with an updated system of signals and controls is an ITS application that would be appropriate for the signalized intersections in the corridor like those on 2nd Street.

### 5.2.9 Options and Strategies to be Evaluated for the Corridor

The design configurations and transportation strategies listed below will be evaluated in **Part 6.0** of this study.

### Table 5-2: Options Receiving Initial Consideration in the Corridor Study

| Design Configurations Evaluated in Detail in the FEIS/ROD | Design Configurations Developed After the FEIS/ROD | Other Options Warranting Consideration |
|---|---|---|
| Alternative A (Four Lane)<br>Alternative C (Couplet 1)<br>Alternative C (Couplet 2)<br>**Alternative C (Couplet-3) - FEIS/ROD PREFERRED ALT**<br>Alternative C (Couplet 4)<br>Alternative C (Offset) | Modified ROD Configuration<br>Contra-Flow Configuration<br>Truck Route Configuration<br>Downtown Business District<br>Master Plan Configuration | Revisit Western Route Alternates (FEIS Bypass Alternatives A - D)<br>Revisit TDM<br>Revisit TSM<br>Transit Improvements<br>Intelligent Transportation System (ITS) Strategies<br>Selected Off-system Improvements Indirectly Benefiting the Corridor |

# 6.0 EVALUATION OF DESIGN OPTIONS FOR THE CORRIDOR

# 6.0 EVALUATION OF DESIGN OPTIONS FOR THE CORRIDOR

The methods used to evaluate potential design and improvement options for the US 93 corridor through Whitefish and the results of initial screening efforts are presented in this Part. The screening process was focused on the conceptual design and improvement options and other strategies identified in **Part 5.0** of this study. These options and strategies were presented and discussed at meetings with the Citizen's Advisory Committee and general public held during August 2008. A summary of these meetings can be found in **APPENDIX A**.

## 6.1 Overview of Screening Process

Screening is a term often used to describe the process for reviewing a range of conceptual design and improvement options or strategies ("alternatives") and deciding which ones to carry forward for detailed study. The primary function of the screening process is to determine feasible actions to address the overall purpose and specific needs of a project. Screening provides a means of separating the **unreasonable** options (those which can be eliminated without detailed study) from the **reasonable** options (those carried forward for more detailed study).

The overall purpose of this evaluation process is to screen potential improvements and strategies to help identify reasonable actions for the US 93 corridor. Reasonable design and improvement options will be subjected to a more detailed analysis to finalize the recommended system improvements for the corridor.

The Council on Environmental Quality (CEQ) regulations implementing NEPA do not define the term "reasonable" alternative. However, based on the CEQ's guidance (Question 2a in its *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*), "reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant." This general guidance will be considered in the identification reasonable design options for the corridor.

The evaluation of design and improvement options will rely on a multi-step process designed to consider how well the potential improvement strategies address the overall vision for the corridor and the following goals:

1. Preserve the role of US 93 as regional transportation route while recognizing the need for the segment of US 93 within the corridor to adequately function as an urban principal arterial.
2. Design improvements that provide a safe roadway and transportation environment for facility users and those abutting the roadway.

3. Ensure improvements are consistent with current MDT geometric design criteria for Urban Principal Arterials wherever practicable.
4. Provide transportation solutions that minimize impacts to the natural, cultural and social environment in the corridor where practicable.
5. Ensure corridor improvements are feasible to implement and represent a reasonable expenditure of limited public funds.
6. Provide transportation improvements in the corridor that are compatible with local land use and transportation plans and that are sensitive to aspects of the community valued by Whitefish's residents.

These goals support the vision statement presented in **Part 4.0** of this Corridor Study. The goals also reflect the purpose and need for improving the highway corridor as presented in the U.S. Highway 93 Somers-Whitefish FEIS/ROD. The original FEIS purpose and need statement remains valid because the same fundamental needs identified in the document still exist within the Whitefish Urban corridor.

Conceptual design improvement options and other strategies for the corridor were pre-screened to identify potential fatal flaws and to determine their general ability to support the purpose and need for improving US 93 through Whitefish. Improvement options and transportation strategies advanced from the pre-screening evaluation were then subjected to a more detailed assessment process based on criteria established for a variety of screening categories sensitive to the identified goals for corridor improvements.

## 6.2 Pre-Screening of Corridor Design Options and Strategies

### 6.2.1 Pre-Screening for Fatal Flaws

As a first step in identifying potentially actions for the corridor, the range of design and improvement options and other strategies identified in **Part 5.0** were pre-screened to help avoid consideration of improvements or actions that fail to support the overall goals for the US 93 corridor or that possess "fatal flaws." Fatally flawed design options or transportation strategies are those that common sense suggests are unrealistic or that have little or no reasonable chance of being implemented. The following factors were considered to be potential fatal flaws for corridor design options or strategies:

- Potentially excessive project costs
- Not feasible for legal/logistical reasons (i.e., unlikely to be permitted)
- Reliance on unproven technology
- Clearly unacceptable effects on the natural environment
- Clearly unacceptable community impacts with potential for substantial local opposition

The pre-screening step also consisted of assessing each option or strategy with a subjective "Yes" or "No" response to the following questions based on six overall

corridor needs:

- *Would the design and improvement option or strategy provide a transportation facility that meets current and future demands?*
- *Would the design and improvement option or strategy improve the operation and efficiency of the facility for the traveling public by incorporating measures to enhance traffic flows and better manage truck traffic in the corridor?*
- *Would the design and improvement option or strategy reduce opportunities for traffic conflicts and crashes associated with turning movements at major intersections and other corridor locations?*
- *Would the design and improvement option or strategy incorporate physical changes to the roadway and its adjoining environment so the road's design complies with MDT's geometric design criteria for Urban Principal Arterials?*
- *Would the design and improvement option or strategy provide facility improvements that consider recommendations made in local plans?*
- *Would the design and improvement option or strategy ensure future improvements help maintain the character of the community by being sensitive to the surrounding natural environment and land uses?*

### 6.2.2 Options and Strategies Eliminated through Pre-Screening

The paragraphs below identify the options and strategies dropped as a result of the pre-screening evaluation and discuss the reasons for their elimination.

**Western Route Alternates.** None of the Western Route Alternates (FEIS Bypass Alternatives A - D) were advanced for detailed screening. The Whitefish Transportation Plan does not endorse the development of a western bypass route for US 93 based on the results of travel demand modeling, potential environmental impacts, likely public opposition, and cost considerations.

Although a western bypass route would offer an alternative to the use of US 93 through Whitefish, the results of travel demand modeling clearly illustrated that a bypass would not solve the <u>future</u> traffic issues along US 93 corridor. Modeling showed a bypass would draw traffic but would typically reduce traffic volumes on Spokane Avenue or 2nd Street through downtown Whitefish by about 10-15%. With such a limited reduction in corridor traffic volumes, it is difficult to justify the large expense and environmental consequences of developing an entirely new route around Whitefish. The Transportation Plan takes the position that the community is better served by strengthening the existing transportation grid system, enhancing east-west connectivity, and establishing new roadway corridors <u>if and when</u> vacant lands develop.

Comments received during the development of the Transportation Plan both supported and opposed the concept of a bypass route. Proponents of a bypass advocate it will reduce overall traffic volumes in the downtown, detour truck traffic and make the business district more "community oriented." However, there is still local opposition to the idea of a bypass based on perceived adverse impacts to the low density "rural" neighborhoods on the southwest side of Whitefish and potential environmental effects to abundant wetlands and surface waters in this area.

Planning level cost estimates developed for the Whitefish Transportation Plan conservatively estimated the construction costs of a western bypass at between $4 and $9 million depending upon the selected route. These estimates did not include the associated costs of land for right-of-way which would add significantly to the total cost given the high property values in the Whitefish area. The costs of right-of-way acquisition along with associated costs for design and environmental compliance activities make developing a bypass a very expensive course of action.

As an example, planning and development activities have been underway for nearly a decade on the Kalispell Bypass and a contract to build a portion of the bypass was let in late 2009. The estimated cost of the southern section of the Kalispell Bypass (including right-of-way acquisition) is between $34 and $36 million with a significant portion of the funding coming from federal earmarks and stimulus monies.

With limited transportation funding available to MDT and local governments, implementing a bypass project in the Whitefish area would be financially unattainable in the short-term.

**Selected Off-System Improvements.** The Whitefish Transportation Plan examined the effects of making changes to the local road and street network to enhance travel and street connectivity within the Whitefish Study Area. Many of the improvements modeled for the Transportation Plan were associated with "off-system" roads (i.e. roads and streets not on the state's Urban System or under MDT's maintenance responsibility). Projects from the Transportation Plan with the potential to benefit operations on US 93 included:

- **Columbia Avenue South Extension (MSN-2)**
- **Karrow Avenue Reconstruction (MSN-3)**
- **Baker Avenue Extension (MSN-4)**
- **Kalner Lane Extension (MSN-8)**

Travel demand modeling shows these and other locally implemented improvements to off-system roads could potentially benefit traffic operations on US 93 by offering alternate routes for travel that may draw some traffic from the corridor. However, none of the off-system road improvement projects examined in the Transportation Plan offer the potential to address the anticipated travel demands and meet other needs on the US 93 corridor.

**Transportation System Management (TSM).** Transportation System Management (TSM) projects are designed to increase the operational efficiency and capacity of the existing street system. These strategies often include limited actions like installing new traffic signals, adding turn lanes at intersections, removing or restricting on-street parking, and lighting and signage improvements. The Whitefish Transportation Plan recommends two TSM improvement projects in the corridor study area:

- **TSM-2 (13th Street/US Highway 93 Intersection) –** Revise lane use designations and striping to smooth traffic flows on the east and west approaches to the intersection.

- **TSM-3 (Baker Avenue/13th Street Intersection) -** Install a traffic signal at the intersection of Baker Avenue and 13th Street when signal warrants are met.

These projects could provide interim relief and help resolve traffic congestion and associated issues at spot locations on the US 93 corridor or adjoining roads. However, by themselves, the TSM projects do not represent a long-term or comprehensive way to address all corridor needs.

**Travel Demand Management (TDM).** TDM strategies can reduce travel demand and improving traffic flow during peak hours. These strategies consist of programs or policies focused on either reducing the number of vehicles on the roadway or redistributing trips so they occur during less congested periods of the day. Widely practiced TDM measures include telecommuting, variable work hours, walking or bicycling to work, employer-based carpool and vanpool programs, and parking management strategies.

The Whitefish Transportation Plan recognizes that some TDM measures could be effective in helping to reduce travel (vehicle trips and the vehicle miles traveled) as Whitefish grows. While the use of TDM strategies in Whitefish is encouraged, this strategy would likely result in only a small reduction in overall vehicle travel in the community and the corridor.

**Transit Improvements.** Improving bus transit within the community is a strategy that could help address traffic congestion and future travel demands on US 93. Currently, several organizations offer limited transit services within Whitefish (like the Snow Bus to Whitefish Mountain Resort and Eagle Transit's shuttle services to other Flathead Valley communities). However, these services are offered only on a seasonal basis within Whitefish.

The Whitefish Transportation Plan notes considerable interest within the community for the expansion of transit services.

Given the limited public transportation services presently available in Whitefish and funding issues typically associated with establishing and operating such services,

relying on transit alone to reduce congestion on the US 93 corridor is unrealistic. Transit options were not advanced because they would not meet future travel demands on US 93 and would require large public subsidies to provide necessary capital and operating costs.

**ITS Strategies.** Although ITS strategies could potentially benefit some traffic operations in the greater Whitefish area, they would be unlikely to produce any significant travel changes within the US 93 corridor. For this reason, ITS strategies were not recommended for further evaluation.

While ITS as an overall strategy for addressing corridor needs was not recommended, video detection coupled with an updated system of traffic signals and controls is an ITS application that would likely be incorporated with future improvements at the signalized intersections along the US 93 corridor.

### 6.2.3 Corridor Design Options and Strategies Advanced

The results of the pre-screening evaluations for corridor design options and strategies are presented in **Table 6-1**. As the table shows, all "Build Options" for the US 93 corridor from the U.S. Highway 93 Somers-Whitefish FEIS/ROD were recommended for further evaluation. The Build Options generally address many of the identified needs of the corridor although some options are more responsive than others. Without a detailed analysis of their potential ability to serve current and future travel demands in the corridor it is not possible to eliminate specific design options. These detailed analyses were undertaken as part of the first-level screening process.

Additionally, the four design configurations developed after the FEIS/ROD were advanced. These configurations attempt to respond to newly identified capacity and geometric needs in the corridor and changed conditions in the community.

# Table 6-1: Pre-Screening Evaluation of Corridor Options and Strategies

| *CONSISTENCY WITH THE CORRIDOR PURPOSE AND NEED STATEMENT (from US Highway 93 Somers-Whitefish West FEIS)* | FEIS/ROD Preferred Alternative | OTHER ALTERNATIVES FROM US HIGHWAY 93 SOMERS TO WHITEFISH WEST FEIS | | | | |
|---|---|---|---|---|---|---|
| | | Alternative A (4-Lane) | Alternative C (Offset) | Alternative C (Couplet-1) | Alternative C (Couplet 2) | Alternative C (Couplet 4) |
| Would the design and improvement option or strategy provide a transportation facility that meets current and future demands? | UNKNOWN without further analysis | | | | | |
| Would the design and improvement option or strategy improve the operation and efficiency of the facility for the traveling public by incorporating measures to enhance traffic flows and better manage truck traffic in the corridor? | YES (Operations) PARTIALLY (Trucks) | YES (Operations) NO (Trucks) | YES (Operations) PARTIALLY (Trucks) | | | |
| Would the design and improvement option or strategy reduce opportunities for traffic conflicts and crashes associated with turning movements at major intersections and other corridor locations? | YES | YES | YES | YES | YES | YES |
| Would the design and improvement option or strategy incorporate physical changes to the roadway and its adjoining environment so the road's design complies with MDT's geometric design criteria for Urban Principal Arterials? | YES | YES | YES | YES | YES | YES |
| Would the design and improvement option or strategy provide facility improvements that consider recommendations made in local plans? | NO | NO | NO | NO | NO | NO |
| Would the design and improvement option or strategy ensure future improvements help maintain the character of the community by being sensitive to the surrounding natural environment and land uses? | YES (New Bridge Impacts River) | NO | YES | YES | YES (New Bridge Impacts River) | YES |
| *POTENTIAL FATAL FLAWS?*<br>1. Potentially excessive project costs<br>2. Legal/logistical infeasibility<br>3. Reliance on unproven technology<br>4. Potentially unacceptable environmental effects<br>5. Potentially unacceptable community impacts or community opposition | NO | YES (4, 5) | NO | NO | NO | NO |
| *ADVANCE TO DETAILED SCREENING?* | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** |

# Table 6-1: Pre-Screening Evaluation of Corridor Options and Strategies (Cont.)

| *CONSISTENCY WITH THE CORRIDOR PURPOSE AND NEED STATEMENT (from US Highway 93 Somers-Whitefish West FEIS)* | OPTIONS IDENTIFIED AFTER THE FEIS/ROD | | | |
|---|---|---|---|---|
| | **Modified Record of Decision Configuration** | **Contra-Flow Configuration** | **Truck Route Configuration** | **Whitefish Downtown Business District Master Plan Configuration** |
| Would the design and improvement option or strategy provide a transportation facility that meets current and future demands? | UNKNOWN without further analysis | UNKNOWN without further analysis | UNKNOWN without further analysis | UNKNOWN without further analysis |
| Would the design and improvement option or strategy improve the operation and efficiency of the facility for the traveling public by incorporating measures to enhance traffic flows and better manage truck traffic in the corridor? | YES (Operations) PARTIALLY (Trucks) | YES | YES | YES |
| Would the design and improvement option or strategy reduce opportunities for traffic conflicts and crashes associated with turning movements at major intersections and other corridor locations? | YES | YES | YES | YES |
| Would the design and improvement option or strategy incorporate physical changes to the roadway and its adjoining environment so the road's design complies with MDT's geometric design criteria for Urban Principal Arterials? | YES | YES | YES | YES |
| Would the design and improvement option or strategy provide facility improvements that consider recommendations made in local plans? | PARTIALLY | YES | YES | YES |
| Would the design and improvement option or strategy ensure future improvements help maintain the character of the community by being sensitive to the surrounding natural environment and land uses? | YES (New Bridge Impacts River) | YES (New Bridge Impacts River) | YES (New Bridge Impacts River) | YES (New Bridge Impacts River) |
| *POTENTIAL FATAL FLAWS?*<br>1. Potentially excessive project costs<br>2. Legal/logistical infeasibility<br>3. Reliance on unproven technology<br>4. Potentially unacceptable environmental effects<br>5. Potentially unacceptable community impacts or community opposition | NO | NO | NO | NO |
| *ADVANCE TO DETAILED SCREENING?* | **YES** | **YES** | **YES** | **YES** |

# Table 6-1: Pre-Screening Evaluation of Corridor Options and Strategies (Cont.)

| *CONSISTENCY WITH THE CORRIDOR PURPOSE AND NEED STATEMENT (from US Highway 93 Somers-Whitefish West FEIS)* | OTHER TRANSPORTATION STRATEGIES FOR US 93 THROUGH WHITEFISH | | | | | |
|---|---|---|---|---|---|---|
| | Western Route Alternates | Selected Off-system Improvements | Transit (Bus Service) Only | TDM Strategies Only | TSM Strategies Only | ITS Strategies |
| Would the design and improvement option or strategy provide a transportation facility that meets current and future demands? | NO | NO | NO | NO | NO | NO |
| Would the design and improvement option or strategy improve the operation and efficiency of the facility for the traveling public by incorporating measures to enhance traffic flows and better manage truck traffic in the corridor? | NO | NO | NO | NO | NO | NO |
| Would the design and improvement option or strategy reduce opportunities for traffic conflicts and crashes associated with turning movements at major intersections and other corridor locations? | NO | NO | NO | NO | NO | NO |
| Would the design and improvement option or strategy incorporate physical changes to the roadway and its adjoining environment so the road's design complies with MDT's geometric design criteria for Urban Principal Arterials? | NO | NO | NO | NO | YES | NO |
| Would the design and improvement option or strategy provide facility improvements that consider recommendations made in local plans? | PARTIALLY | NO | NO | NO | NO | NO |
| Would the design and improvement option or strategy ensure future improvements help maintain the character of the community by being sensitive to the surrounding natural environment and land uses? | NO | NO | YES | YES | NO | NO |
| *POTENTIAL FATAL FLAWS?*<br>1. Potentially excessive project costs<br>2. Legal/logistical infeasibility<br>3. Reliance on unproven technology<br>4. Potentially unacceptable environmental effects<br>5. Potentially unacceptable community impacts or community opposition | YES (1, 4, 5) | NO | YES (1) | NO | NO | NO |
| *ADVANCE TO DETAILED SCREENING?* | **NO** | **NO** | **NO** | **NO** | **NO** | **NO** |

## 6.3 Screening Process for Design Options

The design configurations advanced from the Pre-screening stage were subjected to more detailed screening to help determine reasonable improvement actions for the corridor. Detailed screening is a two-step process intended to identify those options that best address the goals for the corridor.

### 6.3.1 First-Level Screening

This initial screening step involved an assessment of corridor options to identify those design options that are most practical or feasible from a technical, economic, and environmental standpoint. First-level screening was intended to reduce the number of options through the general consideration of their ability to meet goals and associated objectives for the corridor. The options were evaluated against a set of screening criteria relating to identified goals and objectives for the US 93 corridor.

An assessment of each design option was conducted to help identify:

- Options that would be unlikely to provide desired operational or safety characteristics under current or future conditions;
- Options that could potentially cause unreasonable impacts to the environment;
- Options that lack consistency with local plans or community desires; and
- Options that may be financially unrealistic due to high implementation costs.

The initial screening step included an operational review, an assessment of potential environmental effects, and a generalized estimate of project costs (low, medium, and high cost) for each option. Traffic modeling for existing and future year (2030) conditions and simulations provided the information needed to assess the operational characteristics and overall performance of each design option.

The options advanced to second-level screening were based on how well each design option addressed the first-level screening considerations.

### 6.3.2 Second-Level Screening

The design and improvement options advanced from the first-level screening stage were then subjected to a second and more detailed screening evaluation to help identify the option(s) that best address corridor needs. Where possible, the final screening process considered quantifiable measures to help differentiate between each option.

### 6.3.3 Screening Criteria

Screening criteria based on the goals and objectives for the corridor were developed to help evaluate design options at each screening level. The screening considerations used

to evaluate design options are highlighted briefly below:

- **Capacity and Traffic Operations:** This consideration relates to operational characteristics and performance of design and improvement options for with the corridor. The criteria relate to how well each option addresses current and future travel demands based on the results of detailed modeling and performance analyses.

- **Safety:** This screening consideration focuses on improvements to the corridor from a safety standpoint. Issues such as traffic conflicts, bike and pedestrian safety, and contributing factors identified from the crash analysis are covered in this screening consideration.

- **Eliminate/Reduce Roadway Deficiencies:** Compliance to MDT's geometric design criteria is the focus of this consideration.

- **Potential Environmental Effects:** Environmental impacts that each design option is expected to have on the community are the focus of this screening consideration. Conformity to environmental standards is also addressed in these criteria.

- **Feasibility and Affordability:** This consideration is concerned with issues like overall constructability and probable cost of the improvements, future compliance with the National Environmental Policy Act (NEPA) and Montana Environmental Policy Act (MEPA), and the potential for agency or public opposition to aspects of the improvements.

- **Compatibility with Local Plans and Community Ideals:** This screening consideration addresses consistency with local accepted plans and community desires.

The first-level and second-level screening criteria used to evaluate corridor design options can be found in **APPENDIX C**.

## 6.4 Initial Operational Reviews of Corridor Design Options

### 6.4.1 Methodology

Each design option considered for the corridor was analyzed to help assess how the option may perform under current and future traffic conditions. The proposed corridor modifications (lane configurations and assumed intersection controls) for each design option were added to the street network and modeled using the travel demand model created for the Whitefish Transportation Plan. Modeling was conducted for each design option to provide an indication of how the option might initially operate and perform by the year 2030.

The results of the travel demand modeling for each design option (traffic volumes and turning movement distributions) were used as inputs to analyze peak hour LOS at intersections in the corridor and for operational reviews of road network performance using *Synchro* software. The software is capable of producing detailed reports with numerical values for measures of effectiveness (MOE) to help gauge network operations under current and future conditions. The MOE provide a way of comparing traffic operations on a broader scale than just focusing on LOS for individual intersections. Examining the relative differences between the values for individual MOEs can be insightful when comparing the overall performance of various design options.

It should be noted that some of the MOEs calculated by the *Synchro* software are difficult to compare and not very meaningful due to the differences between the design configurations. **Table 6-2** identifies and defines the relevant MOEs for each design option considered during the first-level screening assessment.

## Table 6-2: Relevant Measures of Effectiveness

| MEASURE OF EFFECTIVENESS | DEFINITION |
|---|---|
| **Total Delay** | A measure in hours of the total vehicle delay within the network. Delay can also be expressed in terms of the number of seconds of delay experienced by each vehicle using the network. Lower values suggest better network operations. |
| **Total Number of Stops** | A sum of the total number of stops by vehicles within the network. Stops can also be expressed in terms of the number of stops per vehicle using the network. Lower values suggest better network operations. |
| **Total Travel Time** | A sum of the individual vehicle travel times in hours within the network. Lower values suggest better network operations. |
| **Distance Traveled** | A sum of the individual vehicle distance traveled in miles within the network. Lower values for miles traveled suggest more efficient travel through the network and less out of direction travel. |
| **Intersection LOS** | A summary of intersection level of service within the network. The rating is based on the number of signalized intersections and unsignalized operating at or below LOS D. |
| **Unserved Vehicles** | The total number of vehicles in the network not served upon arrival by the first green phase of traffic signals. Unserved vehicles must wait for successive red or green phases. Lower values for unserved vehicles suggest more efficient network operations. |
| **Fuel Consumed** | The combined total amount of fuel consumed by all vehicles in the network. Lower values for fuel consumption suggest more efficient network operations. |
| **CO Emissions** | The combined total amount of CO emitted by all vehicles in the network. Lower values suggest more efficient network operations. |

## 6.4.2 Results of Initial Operational Reviews

**Operational Reviews of Design Options Under Current Conditions.** **Table 6-3** presents MOE ratings for each design option based on the operational assessment of network performance under current (2003) conditions. The ratings provide a general indication of how each option may perform with respect to individual MOEs and offer a means to compare overall performance among the options. The table illustrates the options that showed the best and worst performance characteristics and those options that fell somewhere in the "middle" with respect to relevant MOE values.

The ratings reflect the numerical MOE values calculated by the *Synchro* software that can be found in **APPENDIX D**.

### Table 6-3: MOE Ratings for Design Options - Current (2003) Conditions

| CORRIDOR DESIGN CONFIGURATION | MEASURE OF EFFECTIVENESS (MOE) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Delay | Total Stops | Travel Time | Distance Traveled | Signalized Intersections Below LOS D | Unsignalized Intersections Below LOS D | Unserved Vehicles | Fuel Consumed / CO Emissions |
| Alternative A (Four Lane) | ● | ● | ● | ● | ● | ● | All Equal | ●/● |
| Alternative C (Couplet 1) | ● | ○ | ● | ◒ | ○ | ● | All Equal | ◒/◒ |
| Alternative C (Couplet 2) | ◒ | ○ | ○ | ◒ | ○ | ○ | All Equal | ◒/◒ |
| Alternative C (Couplet-3) FEIS/ROD PREFERRED | ◒ | ◒ | ◒ | ◒ | ○ | ○ | All Equal | ◒/◒ |
| Alternative C (Couplet 4) | ● | ● | ● | ◒ | ○ | ● | All Equal | ●/● |
| Alternative C (Offset) | ◒ | ◒ | ○ | ○ | ● | ◒ | All Equal | ○/○ |
| Modified ROD | ○ | ◒ | ○ | ◒ | ○ | ○ | All Equal | ◒/◒ |
| Contra-Flow Configuration | ○ | ○ | ○ | ○ | ○ | ◒ | All Equal | ○/○ |
| Truck Route | ◒ | ◒ | ◒ | ◒ | ● | ◒ | All Equal | ●/● |
| Downtown Business District Master Plan | ◒ | ◒ | ◒ | ◒ | ○ | ◒ | All Equal | ◒/◒ |

○ Among Best Performing Options for MOE

◒ MOE Values Falling Between Best and Worst Performing Options

● Among Worst Performing Options for MOE

Based on the MOE ratings from **Table 6-3**, the Contra-Flow option appears to exhibit the best performance under current conditions. The Alternative C (Couplet 2), Alternative C (Offset), and Modified ROD configurations also showed some of the best performance characteristics under current conditions. The Alternative A (Four Lane) option was among the worst performing design configuration based on MOEs for current conditions. The Alternative C (Couplet 1) and Alternative C (Couplet 4) configurations also showed poor performance characteristics based on the MOE ratings based on current conditions.

The operational review showed that many of the options fell "somewhere in the middle" for performance characteristics and many options appear to operate similarly with respect to several MOEs. For example, the operational review showed all options resulted in no unserved vehicles. There was also little difference among all options in the MOE for the number of signalized intersections operating below LOS D—the "worst" performing options showed only one intersection operating below LOS D.

**Operational Reviews of Design Options Under Future Conditions.** The operational review also examined the potential performance of design options under year 2030 conditions. **Table 6-4** on the following page shows a generalized rating for each design option based on a comparison of calculated values for relevant MOEs.

**Table 6-4** shows the Contra-Flow and Alternative C (Couplet 4) options exhibit some of the best performance characteristics based on the MOEs for year 2030 conditions. The Alternative C (Couplet 2) and the Alternative C (Offset) configurations were design options that showed good performance characteristics for several MOEs. The Alternative A (Four Lane) and Alternative C (Couplet 1) options were the worst performing design configuration based on MOEs for future conditions. The Alternative C (Couplet-3) FEIS/ROD Preferred, Alternative C (Offset), and Truck Route configurations also showed poor performance characteristics with one or more of the relevant MOE ratings for future conditions.

There was little difference in performance among most design options with respect to the number of unsignalized intersections operating at or below LOS D. The operational review showed that most unsignalized intersections along the corridor would likely operate at or below LOS D in the future. Nine of the ten design configurations showed poor operations at unsignalized intersections. This poor LOS is due to the delays that side street traffic at unsignalized intersections may encounter when attempting to enter or cross high volume corridor roads.

As noted previously, the numerical MOE values for future conditions presented in **APPENDIX D**.

### Table 6-4: MOE Ratings for Design Options - 2030 Conditions

| CORRIDOR DESIGN CONFIGURATION | MEASURE OF EFFECTIVENESS (MOE) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Delay | Total Stops | Travel Time | Distance Traveled | Signalized Intersections Below LOS D | Unsignalized Intersections Below LOS D | Unserved Vehicles | Fuel Consumed / CO Emissions |
| Alternative A (Four Lane) | ● | ● | ● | ● | ○ | ◒ | ◒ | ●/● |
| Alternative C (Couplet 1) | ● | ○ | ● | ◒ | ◒ | ◒ | ◒ | ●/● |
| Alternative C (Couplet 2) | ○ | ◒ | ○ | ◒ | ● | ◒ | ◒ | ○/○ |
| Alternative C (Couplet-3) FEIS/ROD PREFERRED | ◒ | ◒ | ◒ | ◒ | ● | ◒ | ● | ◒/◒ |
| Alternative C (Couplet 4) | ◒ | ○ | ◒ | ○ | ○ | ○ | ○ | ◒/◒ |
| Alternative C (Offset) | ◒ | ● | ◒ | ◒ | ○ | ● | ○ | ◒/◒ |
| Modified ROD | ◒ | ◒ | ◒ | ◒ | ◒ | ◒ | ● | ◒/◒ |
| Contra-Flow Configuration | ○ | ◒ | ○ | ◒ | ◒ | ◒ | ○ | ○/○ |
| Truck Route | ◒ | ◒ | ◒ | ◒ | ● | ◒ | ● | ◒/◒ |
| Downtown Business District Master Plan | ◒ | ◒ | ◒ | ◒ | ◒ | ○ | ◒ | ◒/◒ |

○ Among Best Performing Options for MOE

◒ MOE Values Falling Between Best and Worst Performing Options

● Among Worst Performing Options for MOE

## 6.5 First-Level Screening Assessments for Design Options

The operational review provides an indication of expected current and future performance for each design configuration. While performance is the primary consideration for the corridor, other factors like potential environmental effects, overall cost and implementation requirements, and consistency with local plans must be reviewed to help identify the option(s) that best address the short-term and long-term transportation needs of the corridor.

The following section summarizes the first-level screening assessments of each design option and highlights the advantages and disadvantages associated with implementing each option.

## 6.5.1. Alternative A (4-Lane) Configuration

**ALTERNATIVE A (4-LANE) ADVANTAGES:**

- Adding new travel lanes would increase the capacity of Spokane Avenue and 2nd Street through Whitefish.
- With the provision of dedicated turn lanes at key intersections, the configuration generally performs well under current (2003) conditions.
- Impacts to the Whitefish River could be avoided.
- This option would likely be among those with the lowest overall cost since work would occur along the existing alignment of US 93 and it attempts to provide a 4-lane roadway within the "footprint" of the existing roadway.

**ALTERNATIVE A (4-LANE) DISADVANTAGES:**

- The configuration would operate poorly under future (2030) conditions and was one of the worst performing options under future conditions.
- Trucks accommodations on US 93 would be unchanged.
- All on-street parking along Spokane Avenue and along 2nd between Spokane and Baker Avenues would be lost.
- There would be no provision for bicycles to use the roadway.
- The addition of new travel lanes may make crossings more difficult for pedestrians at unsignalized intersections along Spokane Avenue.
- A 4-lane roadway would notably change the character of Spokane Avenue and 2nd Street.
- There is no local support for reconstructing Spokane Avenue and 2nd Street as 4-lane facilities through downtown Whitefish.

**CONCLUSION: NOT ADVANCED TO SECOND-LEVEL SCREENING**

This design configuration was not advanced because of its anticipated poor future performance, inconsistency with MDT design standards, impacts to on-street parking, and conflicts with local plans.

## 6.5.2. Alternative C (Couplet 1) Configuration

**ALTERNATIVE C (COUPLET 1) ADVANTAGES:**

- The configuration would increase roadway capacity along Spokane Avenue, Baker Avenue, and 2nd Street.
- This configuration would initially perform adequately.
- The configuration removes a portion of the truck traffic currently using Spokane Avenue and 2nd Street by diverting some southbound traffic to Baker Avenue.
- Bicycle lanes could be provided along Spokane and Baker Avenues.
- Impacts to the Whitefish River could be avoided.
- On-street parking could be retained along Spokane and Baker Avenues.
- Right-of-way acquisition would be necessary only at key intersections.
- This option would be among those with the lowest overall construction cost.

**ALTERNATIVE C (COUPLET 1) DISADVANTAGES:**

- When analyzed under future (2030) conditions, Alternative C (Couplet 1) performs poorly.
- Based on several relevant measures of effectiveness, the configuration rated among the worst performing options under future conditions.
- The proposed 3-lane configuration on 2nd Street would likely cause the loss of some on-street parking between Spokane and Baker Avenues and conflicts with recommendations from local plans.
- This configuration relies on a one-way couplet to move traffic through downtown Whitefish. The one-way couplet configuration is not consistent with the traffic circulation concept presented in local plans.

**CONCLUSION: NOT ADVANCED TO SECOND-LEVEL SCREENING**

This design configuration was dropped due to its anticipated poor future performance level. One-way traffic flows on Spokane and Baker Avenues and a 3-lane configuration on 2nd Street are also not consistent with local plans and desires.

## 6.5.3. Alternative C (Couplet 2) Configuration

**ALTERNATIVE C (COUPLET 2) ADVANTAGES:**

- This design configuration increases the overall capacity of the corridor to accommodate traffic.
- The configuration performs adequately under current (2003) conditions and would operate at a high performance level under future (2030) conditions.
- The configuration rated among the best performing options for future conditions based on key measures of effectiveness.
- The 7th Street connection significantly enhances east-west connectivity and could help decrease traffic on Spokane Avenue, 2nd Street, and portions of Baker Avenue.
- A portion of the truck traffic currently using Spokane Avenue and 2nd Street would be diverted to Baker Avenue.
- Like Alternative C (Couplet 1), the option represents one of the configurations with the least impact to on-street parking. On-street parking could be retained along Spokane and Baker Avenues.

**ALTERNATIVE C (COUPLET 2) DISADVANTAGES:**

- This one-way configuration has many of the same disadvantages as Couplet 1.
- The 7th Street connection requires a lengthy and expensive bridge due to its location.
- Building a bridge would affect the Whitefish River and associated wetlands and would be subject to federal, state, and local regulations protecting water quality.
- New right-of-way, including a business acquisition, would be needed to construct the 7th Street connection.
- This option would be among those with the highest overall cost due to the provision of a new bridge, the amount of new road construction and traffic signals, and the need to acquire additional rights-of-way.
- The proposed 3-lane configuration on 2nd Street would likely cause the loss of some on-street parking between Spokane and Baker Avenues and conflicts with parking recommendations from local plans.
- The one-way traffic circulation concept and lane configuration on 2nd Street are not consistent with recommendations from local plans.

**CONCLUSION: NOT ADVANCED TO SECOND-LEVEL SCREENING**

This design configuration was not advanced because one-way traffic circulation and a 3-lane configuration on 2nd Street are not consistent with local plans and desires for downtown Whitefish.

## 6.5.4. FEIS/Record of Decision Preferred Alternative Alternative C (COUPLET 3) Configuration

**FEIS/ROD PREFERRED ALTERNATIVE ADVANTAGES:**

- This design configuration would increase the overall capacity within the corridor.
- This configuration performs well under existing and adequately under future conditions.
- Like Couplet 2, the provision of a bridge with two-way traffic flows at 7th Street improves east-west connectivity and would help reduce out-of-direction travel within the corridor.
- The configuration could reduce truck traffic through the downtown.
- The proposed configuration on Spokane and Baker Avenue could generally be accommodated within the "footprint" of the existing corridor roadways.
- On-street parking could be retained along Spokane and Baker Avenues.

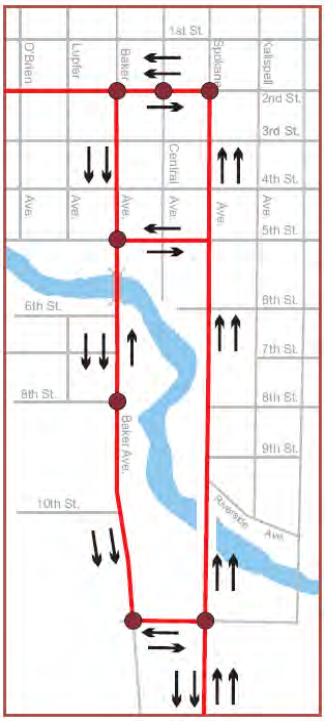
**FEIS/ROD PREFERRED ALTERNATIVE DISADVANTAGES:**

- The proposed 3-lane configuration on 2nd Street would likely cause the loss of some on-street parking between Spokane and Baker Avenues and conflicts with parking recommendations from local plans.
- Building a bridge would affect the Whitefish River and associated wetlands and would be subject to federal, state, and local regulations protecting water quality.
- New right-of-way (including a business acquisition) would be needed to extend 7th Street between Baker and Kalispell Avenues.
- This option would be among those with the highest overall cost due to the provision of a new bridge and required right-of-way acquisitions.
- This configuration relies on a one-way couplet to move traffic through downtown Whitefish and is not consistent with the traffic circulation concept presented in local plans.
- The lane configuration on 2nd Street is not consistent with local desires.

**CONCLUSION: NOT ADVANCED TO SECOND-LEVEL SCREENING**

Although this configuration was identified as the Preferred Alternative in the FEIS/ROD, this option was not recommended for further screening because of capacity and geometric needs and changed community conditions identified since the time of the EIS. The configuration's one-way traffic circulation in the downtown and its configuration on 2nd Street are not consistent with local plans.

## 6.5.5. Alternative C (Couplet 4) Configuration




**ALTERNATIVE C (COUPLET 4) ADVANTAGES:**

- This design configuration would increase the overall capacity within the corridor.
- This configuration would be expected to perform adequately under future (2030) conditions.
- An improved 5th Street would help enhance east-west connectivity between Spokane and Baker Avenues.
- The improvements could generally be made within the existing footprint of corridor roadways.
- Incorporating a single northbound lane on Baker between 5th and 8th Streets would help limit out-of-direction travel particularly for residents of Baker Avenue neighborhoods south of the river.
- This option would be less costly to construct than options incorporating a new bridge at 7th Street.
- On-street parking could be retained along Spokane and Baker Avenues.

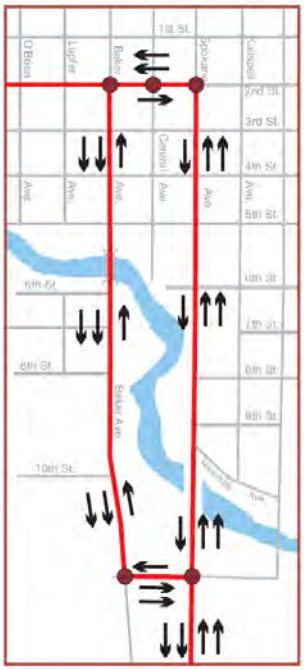
**ALTERNATIVE C (COUPLET 4) DISADVANTAGES:**

- This configuration would be expected to perform poorly under current (2003) conditions.
- The availability of a traffic signal at 5th Street and Baker Avenue could increase traffic volumes and congestion in the area due to recirculating traffic.
- Changing lane configurations on Baker Avenue could be confusing to drivers.
- This configuration would require widening Baker Avenue (including the existing bridge) between 5th and 8th Streets to accommodate a 3-lane roadway. This may require additional right-of-way.
- The Whitefish River could be impacted due to work at the Baker Avenue crossing.
- The proposed 3-lane configuration on 2nd Street would likely cause the loss of some on-street parking between Spokane and Baker Avenues and conflicts with parking recommendations from local plans.
- This option incorporates one-way traffic flows on Spokane and Baker Avenues in downtown Whitefish.
- The lane configuration on 2nd Street is not consistent with local desires.

**CONCLUSION: NOT ADVANCED TO SECOND-LEVEL SCREENING**

This design configuration was dropped from consideration because its one-way traffic circulation on Spokane and Baker Avenues and 3-lane configuration on 2nd Street are not consistent with local plans for the downtown.

## 6.5.6. Alternative C (Offset) Configuration




**ALTERNATIVE C (OFFSET) ADVANTAGES:**

- This design configuration would increase the overall capacity within the corridor.
- The configuration reflects the existing street network and does not require adding any new roadway links.
- The operational reviews show this option it would provide a high performance level under current (2003) conditions.
- Much of Spokane and Baker Avenues and 2nd Street could be improved within the existing roadway footprint.
- Truck traffic could be diverted from Spokane Avenue at 13th Street and from 2nd Street at Baker Avenue.
- This configuration would be less costly to construct than options incorporating a new bridge at 7th Street.
- This option incorporates two-way traffic flows on Spokane and Baker Avenues in downtown Whitefish.

**ALTERNATIVE C (OFFSET) DISADVANTAGES:**

- Although the configuration would initially perform at a high level, it shows a declining performance under future (2030) conditions.
- The three-lane configuration associated with this configuration (two lanes in one direction and one opposing lane) is a non-typical lane configuration. Conflicts between through and turning traffic could increase as "mainline" traffic attempts to turn left across two lanes.
- Diverting truck traffic to Baker Avenue may be opposed by some residents in the area south of the Whitefish River crossing.
- This configuration would require widening Baker Avenue (including the existing bridge) between 5th and 13th Streets to accommodate a 3-lane roadway. This would require areas of right-of-way acquisition along Baker Avenue.
- The Whitefish River would be affected by work at the Baker Avenue crossing.
- On-street parking would be eliminated along Spokane and Baker Avenues south of 2nd Street and some on-street parking on 2nd Street would be lost.
- The lane configuration on 2nd Street is not consistent with local desires.

**CONCLUSION: ADVANCED TO SECOND-LEVEL SCREENING**

The Alternative C (Offset) Configuration was advanced because it builds on the existing roadway network and does not require adding new roadway links. Operational reviews suggest the option would initially perform well and function acceptably in the future. It is the only couplet configuration that provides for two-way traffic circulation in the downtown. Because the option does not include a bridge at 7th Street, the configuration is among the least expensive corridor options.

## 6.5.7. Modified Record of Decision Configuration

**MODIFIED ROD ADVANTAGES:**

- The performance of the FEIS/ROD Preferred Alternative is improved with the modifications provided by this configuration.
- The Modified ROD Configuration would provide a high performance level under current (2003) conditions and continue to perform well under future (2030) conditions.
- This configuration possesses the same advantages as the FEIS/ROD Preferred Alternative including the circulation benefits and enhanced east-west connectivity provided by the 7th Street bridge and street extension.
- The alternate route for trucks via 7th Street and Baker Avenue could potentially reduce truck traffic through the downtown.
- Improvements to corridor roadways could generally be accommodated within the existing roadway footprint.
- On-street parking could be retained along Spokane and Baker Avenues.

**MODIFIED ROD DISADVANTAGES:**

- The proposed 3-lane configuration on 2nd Street would likely cause the loss of some on-street parking between Spokane and Baker Avenues and conflicts with parking recommendations from local plans.
- Building a bridge would affect the Whitefish River and associated wetlands and would be subject to federal, state, and local regulations protecting water quality.
- New right-of-way (including a business acquisition) would be needed to extend 7th Street between Baker and Kalispell Avenues.
- This option would be among those with the highest overall cost due to the provision of a new bridge and required right-of-way acquisitions.
- This option incorporates one-way traffic circulation on Spokane and Baker Avenues in downtown Whitefish.
- The lane configuration on 2nd Street is not consistent with local desires.

**CONCLUSION: NOT ADVANCED TO SECOND-LEVEL SCREENING**

The Modified ROD Configuration was not advanced because one-way traffic flows and a 3-lane configuration on 2nd Street are not consistent with local plans and desires.

## 6.5.8. Contra Flow Configuration

**CONTRA-FLOW ADVANTAGES:**

- The operational reviews showed this configuration would likely perform at a high level under both current (2003) and future (2030) conditions.
- The option was the best performing configuration of those analyzed for this study.
- The alternate route for trucks via 7th Street and Baker Avenue could help reduce truck traffic through the downtown.
- Circulation benefits and enhanced east-west connectivity can be realized by the provision of a bridge at 7th Street and extending 7th Street east of Spokane Avenue.
- Some parking would be retained along both sides of 2nd Street between Spokane and Baker Avenues.
- The configuration maintains two-way traffic flows in the downtown.

**CONTRA-FLOW DISADVANTAGES:**

- Baker Avenue south of the Whitefish River crossing and the existing Baker Avenue bridge would need to be widened to accommodate a 3-lane roadway.
- Additional right-of-way would be required along portions of Baker Avenue from the Whitefish River crossing to 7th Street.
- The Whitefish River would be affected by work at the Baker Avenue crossing.
- Building a new bridge would affect the Whitefish River and associated wetlands and work within the river would be subject to federal, state, and local regulations.
- New right-of-way (including a business acquisition) would be needed to extend 7th Street between Baker and Kalispell Avenues.
- Parking along Spokane and Baker Avenues south of 2nd Street would be eliminated.
- This option would be among those with the highest overall cost.

**CONCLUSION: ADVANCED TO SECOND-LEVEL SCREENING**

This configuration was advanced because the operational reviews showed the Contra-Flow option to be the best performing option under current and future conditions. The 7th Street connection is beneficial since it would efficiently accommodate corridor traffic and enhance east-west connectivity within the community. The option is also generally consistent with concepts and recommendations presented in local plans.

## 6.5.9. Truck Route Configuration

**TRUCK ROUTE ADVANTAGES:**

- This design configuration would result in a minor increase in roadway capacity along the corridor since Spokane Avenue and 2nd Street would remain as 2-lane facilities.
- The Truck Route Configuration would be expected to perform adequately under both existing and future conditions.
- The option provides an alternate route for trucks.
- The 7th Street bridge and 7th Street connection between Spokane and Kalispell Avenues enhances circulation and east-west connectivity.
- The option would retain some parking along both sides of 2nd Street between Spokane and Baker Avenues and along Spokane Avenue where it is currently permitted.
- Consistent with local plans, the configuration would maintain two-way traffic flows in the downtown and provides a 2-lane configuration on 2nd Street.

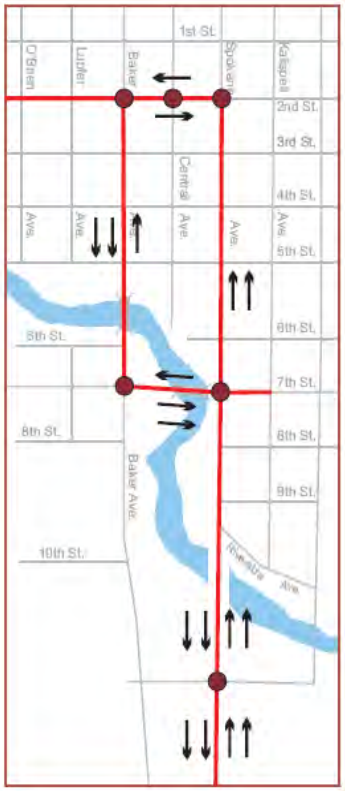
**TRUCK ROUTE DISADVANTAGES:**

- The Truck Route configuration ranked among the worst performing options for two relevant measures of effectiveness under future (2030) conditions.
- Baker Avenue south of the Whitefish River crossing and the existing Baker Avenue bridge would need to be widened to accommodate a 3-lane roadway.
- Additional right-of-way would be required along portions of Baker Avenue from the Whitefish River crossing to 7th Street.
- The Whitefish River would be affected by work at the Baker Avenue crossing.
- Building a new bridge at 7th Street would affect the Whitefish River and associated wetlands and work within the river would be subject to federal, state, and local regulations.
- New right-of-way (including a business acquisition) would be needed to extend 7th Street between Baker and Kalispell Avenues.
- The configuration would eliminate parking along Baker Avenue south of 2nd Street.
- This option would be among those with the highest overall cost.

**CONCLUSION: NOT ADVANCED TO SECOND-LEVEL SCREENING**

While this option may help reduce the presence of trucks on 2nd Street, the Truck Route Configuration was not advanced because it would operate at only an adequate level under future conditions. Although this option is sensitive to local plans, it does not perform as well as another option (the Contra-Flow Configuration) based on a comparison of key measures of effectiveness. The costs and potential environmental effects of the Truck Route configuration are notable due to the provision of a bridge at 7th Street.

## 6.5.10. Downtown Business District Master Plan Configuration




**DOWNTOWN MASTER PLAN CONFIGURATION ADVANTAGES:**

- This design configuration would provide an overall increase in corridor capacity.
- The configuration would likely perform adequately under both current (2003) and future (2030) conditions.
- The configuration provides an alternate route for trucks that could help reduce truck traffic through the downtown.
- The 7th Street connection provides circulation benefits, enhances east-west connectivity, and could help decrease traffic volumes on other corridor roadways.
- Some parking along both sides of 2nd Street between Spokane and Baker Avenues and along one side of Spokane Avenue could be retained.
- This configuration was recommended in the Whitefish Downtown Business District Master Plan.

**DOWNTOWN MASTER PLAN CONFIGURATION DISADVANTAGES:**

- Spokane Avenue north of 7th Street would have a one-way northbound configuration.
- Baker Avenue south of the Whitefish River and the existing Baker Avenue bridge would need to be widened to accommodate a 3-lane roadway.
- Additional right-of-way would be required along portions of Baker Avenue from the Whitefish River crossing to 7th Street.
- Building a new bridge at 7th Street would affect the Whitefish River and associated wetlands and work within the river would be subject to federal, state, and local regulations.
- New right-of-way (including a business acquisition) would be needed to extend 7th Street between Baker and Kalispell Avenues.
- Parking along one side of Baker Avenue south of 2nd Street would be eliminated.
- This configuration is among a group of options with the highest overall cost.

**CONCLUSION: NOT ADVANCED TO SECOND-LEVEL SCREENING**

The Downtown Master Plan Configuration was not advanced due to its anticipated network performance. Although it performs adequately compared to other options, the configuration does not rank among the best performing options based on key measures of effectiveness. Operational reviews suggest the Contra-Flow Configuration would operate more effectively than this option. Like other options with a bridge at 7th Street, the Downtown Master Plan Configuration is costly and its potential environmental effects are notable.

# 6.6 Recommendations Based on First-Level Screening

## 6.6.1 Options Not Advanced to Second-Level Screening

Eight corridor design options were eliminated from further evaluation based on the initial operational reviews and the consideration of the criteria associated with other first-level screening considerations. The options that were dropped after first-level screening are shown in **Table 6-5**.

### Table 6-5: Options Not Advanced to Second-Level Screening

| Design Configurations Evaluated in Detail in the FEIS/ROD | Design Configurations Developed After the FEIS/ROD |
|---|---|
| Alternative A (Four Lane)<br>Alternative C (Couplet 1)<br>Alternative C (Couplet 2)<br>**FEIS/ROD PREFERRED ALTERNATIVE**<br>Alternative C (Couplet 4) | Modified ROD Configuration<br>Truck Route Configuration<br>Downtown Business District Master Plan Configuration |

## 6.6.2 Options Advanced to Second-Level Screening

Two design configurations— the **Alternative C (Offset) Configuration** and the **Contra-Flow Configuration**—were selected for more extensive review based on the results of the first-level screening. All screening categories were considered to identify the option(s) that best satisfy the overall corridor vision and the associated goals supporting the vision. The major reasons why the Alternative C (Offset) and Contra-Flow Configurations were recommended for more detailed study are highlighted below.

- The operational reviews showed the Contra-Flow Configuration ranked as the one of the best performing options under current and future conditions. Providing a road connection between Spokane and Baker Avenues at 7th Street efficiently accommodates corridor traffic and enhances east-west connectivity within the community. The two-lane configuration on 2nd Street and the two-way traffic circulation associated with the Contra-Flow Configuration is also consistent with recommendations in local plans.

- Although the Contra-Flow Configuration initially performs comparably to other options that provide a bridge at 7th Street and two-lanes on 2nd Street (like the Truck Route and Downtown Master Plan Configurations), the Contra-Flow Configuration clearly outperforms these options under future traffic conditions.

- While several other couplet configurations performed similarly or better, only the

Alternative C (Offset) Configuration provides for two-way traffic flows on Spokane and Baker Avenues in the downtown area favored by local residents and the business community. The other couplet configurations rely on one-way traffic flows using Spokane and Baker Avenues to handle corridor traffic. The Offset Configuration requires less out-of-direction travel than the one-way couplet options.

- Due to the anticipated high cost of providing a bridge at 7th Street and its associated environmental effects, there is merit to evaluating an option—like the Alternative C (Offset) Configuration—that does not include a bridge.

- The Alternative C (Offset) Configuration reflects the existing street network and does not require adding any new roadway links.

- Both options offer alternate routing possibilities for trucks passing through Whitefish and could help reduce the number of such vehicles on 2nd Street between Spokane and Baker Avenues.

- The options include a configuration previously considered in the U.S. Highway 93 Somers to Whitefish West FEIS and a configuration developed after the EIS that reflects the type of transportation network improvements currently recommended in local plans.

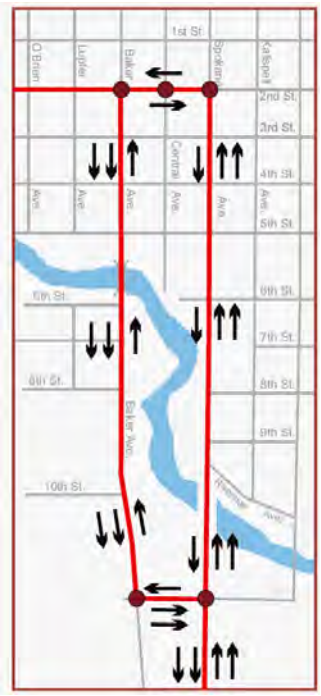
It could be argued that the Downtown Business District Master Plan Configuration should be advanced since the Master Plan has been adopted as part of the City's Growth Policy. However, the Contra-Flow Configuration has some elements in common with the Downtown Master Plan Configuration. The design recommendations from the Downtown Master Plan will be considered as future improvement projects are developed along the corridor.

### 6.6.3 Modification to Alternative C (Offset) Configuration

The initial operational review showed the overall performance of the Alternative C (Offset) option is inhibited by its design configuration on 2nd Street. The option's performance suffers from a lack of dedicated turn lanes at several signalized intersections. The provision of two westbound through lanes and one eastbound through lane on 2nd Street also conflicts with local desires for maintaining a two-lane configuration on the roadway.

As discussed above, the Alternative C (Offset) Configuration has several characteristics that suggest it may be a viable option for the corridor. The operational review showed traffic flows on 2nd Street could be more effectively handled under the Offset Configuration by providing one through lane in each direction, prohibiting left turns at Central Avenue, and adding dedicated turn lanes at the signalized intersections at Spokane and Baker Avenues. Modifying the option in this manner should help the Alternative C (Offset) Configuration better address overall corridor needs.

Making these operational revisions on 2nd Street represents a notable change from the Alternative C (Offset) Configuration initially reviewed. Therefore, the **Modified Alternative C (Offset) Configuration** (shown at right) is considered to be a new and different configuration. Since the Modified Alternative C (Offset) would likely perform better and be more consistent with local plans, the revised configuration was advanced instead of the Alternative C (Offset) Configuration.



# 7.0 TRADEOFFS BETWEEN CONFIGURATIONS OF INTEREST FOR THE CORRIDOR

# 7.0 TRADEOFFS BETWEEN CONFIGURATIONS OF INTEREST FOR THE CORRIDOR

This Part further evaluates the two design configurations advanced from the initial screening of design options and strategies— the Contra-Flow and the Modified Alternative C (Offset) Configurations. These configurations have the following notable similarities and differences:

- The configurations provide additional capacity to the corridor by incorporating three travel lanes on much of Spokane Avenue between 2nd and 13th Streets and three travel lanes on all or portions of Baker Avenue between 2nd and 13th Streets;

- Both configurations would change geometric conditions at key signalized intersections to improve traffic flows and accommodate turning movements by trucks;

- Both configurations would maintain two through travel lanes on 2nd Street and provide auxiliary turn lanes at 2nd Street's intersections with Spokane and Baker Avenues;

- The Contra-Flow configuration includes a bridge at 7th Street and would extend 7th Street between Spokane and Kalispell Avenues; however, the Modified Alternative C (Offset) does not include either of these features; and

- The Modified Alternative C (Offset) configuration incorporates Baker Avenue between 2nd and 13th Streets and 13th Street between Baker and Spokane Avenue to help manage corridor traffic flows.

- The Contra-Flow option uses Baker Avenue between 2nd and 7th Streets and the new 7th Street connection between Baker and Spokane Avenues to move traffic through the corridor.

This Part includes a discussion of how these design configurations address the second-level screening criteria for the major screening categories identified for the study. These screening criteria can be found in **APPENDIX C**. The following pages also compare and contrast the two corridor configurations of interest.

## 7.1 Capacity and Traffic Operations

Urban road systems are generally controlled by the operation of their major intersections. Intersection failures reduce the number of vehicles that can be accommodated during peak travel hours at specific locations and lessen a roadway corridor's overall traffic carrying capacity. Travel demand modeling was conducted for both design configurations to help predict traffic volumes and generate information needed to assess the likely operation of the signalized and unsignalized intersections within the corridor.

### 7.1.1 Operation and Performance of Signalized Intersections

#### 7.1.1.1 Contra-Flow Configuration

Signals currently control traffic flows at four corridor locations (Spokane Avenue and 13th Street, Spokane Avenue and 2nd Street, 2nd Street and Central Avenue, and 2nd Street and Baker Avenue). With the Contra-Flow configuration, traffic signals would be added at Spokane Avenue and 7th Street and at Baker Avenue and 7th Street to regulate traffic flows across the new 7th Street bridge. The operational analyses assumed that left turns from 2nd Street onto Central Avenue would be prohibited and that other key intersections were reconfigured to include appropriate dedicated turn lanes.

The operations at each of the signalized intersections were analyzed based on projected current and future peak hour traffic volumes generated by the travel demand model. Existing signal timings were used to analyze current conditions and optimal signal timing was applied to each signalized intersection to obtain future conditions at that location. **Table 7-1** shows the anticipated current and future LOS at signalized intersections in the corridor with the Contra-Flow configuration.

**Table 7-1: Overall Level of Service at Signalized Intersections Contra-Flow Configuration**

| Signalized Intersection | Current (2003) LOS | Future (2030) LOS |
|---|---|---|
| **Spokane Avenue/13th Street** | **A** | **B** |
| **Spokane Avenue/7th Street** | **B** | **B** |
| **Spokane Avenue/2nd Street** | **B** | **B** |
| **2nd Street/Central Avenue** | **B** | **B** |
| **2nd Street/Baker Avenue** | **C** | **C** |
| **Baker Avenue/7th Street** | **B** | **F** |

A performance assessment and information about anticipated peak hour volumes, delays, and volume to capacity ratios for these signalized intersections under current and future conditions can be found in **APPENDIX D.**

The analyses show that all signalized intersections would operate at an overall rating of LOS C or better under current peak hour conditions. All signalized intersections within the corridor except for the intersection of Baker Avenue and 7th Street would operate at LOS C or above under future (2030) conditions. Based on the assumed lane configuration, analyses show the intersection of Baker Avenue and 7th Street would experience a poor LOS due to the vehicle delays expected along the north and west approaches to the intersection. Future traffic volumes at this intersection could be effectively accommodated by modifying the intersection layout.

The LOS C ratings shown for the intersection of 2nd Street and Baker Avenue assume necessary turn lanes are in place on all approaches at the intersection. Adding a dedicated left-turn lane for eastbound traffic on the west approach, dedicated left and right-turn lanes for westbound traffic on the east approach, and a dedicated right-turn lane for southbound traffic on the north approach would significantly benefit operations at the intersection. However, these improvements cannot be fully completed until a project to relocate City Hall and redevelop the property it occupies moves forward. The intersection currently operates at LOS D and its performance would continue to be inhibited until necessary turning lanes are provided.

#### 7.1.1.2 Modified Alternative C (Offset) Configuration

Signals would control traffic flows at four existing corridor locations (Spokane Avenue and 13th Street, Spokane Avenue and 2nd Street, 2nd Street and Central Avenue, and 2nd Street and Baker Avenue). Additionally, the intersection at Baker Avenue and 13th Street would be controlled by a new traffic signal instead of a four-way stop under the Modified Alternative C (Offset) configuration. With the exception of 2nd Street and Central Avenue, necessary dedicated turn lanes would be added to these key signalized intersections within the corridor. Like the Contra-Flow configuration, it was assumed that left turns from 2nd Street onto Central Avenue would be prohibited.

The following table summarizes the anticipated current and future LOS at signalized intersections in the corridor with the Modified Alternative C (Offset) configuration.

### Table 7-2: Overall Level of Service at Signalized Intersections Modified Alternative C (Offset) Configuration

| Signalized Intersection | Current (2003) LOS | Future (2030) LOS |
|---|---|---|
| **Spokane Avenue/13th Street** | **A** | **C** |
| **Spokane Avenue/2nd Street** | **B** | **B** |
| **2nd Street/Central Avenue** | **B** | **B** |
| **2nd Street/Baker Avenue** | **C** | **C** |
| **Baker Avenue/13th Street*** | **B** | **B** |

* Assumes intersection is changed from its existing stop-controlled condition.

**APPENDIX D** includes a performance assessment and information about anticipated peak hour volumes, delays, and volume to capacity ratios for these signalized intersections under current and future conditions.

The analyses show that all signalized intersections in the corridor would operate at an overall rating of LOS C or better under current and future peak hour conditions under the Modified Alternative C (Offset) configuration.

As discussed earlier, the LOS ratings for the intersection of 2nd Street and Baker Avenue are somewhat misleading since necessary turn lanes must be in place on all approaches for the intersection to function at LOS C. The intersection would likely continue to operate at LOS D or below until all necessary turning lanes are provided.

## 7.1.2 Operation and Performance of Unsignalized Intersections

### 7.1.2.1 Contra-Flow Configuration

**Table 7-3** shows the anticipated current and future LOS at unsignalized intersections in the corridor with the Contra-Flow configuration. Currently, only three unsignalized intersections operate at LOS D or below during the peak hour. However, the analyses show that all but one of the intersections would operate at or below LOS D under future peak hour conditions.

### Table 7-3: Level of Service at Unsignalized Intersections Contra-Flow Configuration

| Unsignalized Intersection (Stop-Controlled Side Streets) | Current (2003) LOS | Future (2030) LOS |
|---|---|---|
| Spokane Avenue/Riverside | B | C |
| Spokane Avenue/9th Street | A | F |
| Spokane Avenue/8th Street | E | F |
| Spokane Avenue/6th Street | D | F |
| Spokane Avenue/5th Street | C | F |
| Spokane Avenue/4th Street | C | F |
| Spokane Avenue/3rd Street | B | D |
| Baker Avenue/3rd Street | C | F |
| Baker Avenue/4th Street | C | F |
| Baker Avenue/5th Street | D | F |
| Baker Avenue/6th Street | C | F |
| Baker Avenue/8th Street | B | F |
| Baker Avenue/10th Street | C | F |

It is important to recognize that the LOS ratings are based on the movement that shows the greatest average delay at the intersection (usually a left turn or a through movement from the stop-controlled street). The poor LOS ratings predicted for the unsignalized intersections along Spokane and Baker Avenues are the result of delays for side street traffic and not due to poor traffic flows on the main roadways.

Traffic on some side streets already experiences delays when attempting to cross or turn left onto Spokane or Baker Avenues during peak travel periods. The volume of two-way traffic on these roadways is expected to increase in the future and side street movements

would be inhibited because fewer gaps in traffic flows would be available during peak hours. Additionally, traffic attempting left turns off of Spokane or Baker Avenue may experience delays at unsignalized intersections due to high anticipated traffic volumes in the future.

The stop-controlled intersection of Baker Avenue and 13th Street is not part of the Contra-Flow configuration. However, travel demand modeling produced traffic volume information needed to analyze the current and future operation of this intersection with the configuration in place. The LOS analysis showed a poor service level (LOS D and LOS F) resulting at the intersection under both existing and future conditions. This suggests the traffic volumes at this intersection are too high to be adequately handled using stop control and that the location needs to be signalized in the future. Signalizing this intersection would provide a LOS of A under both existing (2003) and future (2030) conditions. The City of Whitefish has already identified this intersection as a potential location for a new traffic signal.

#### 7.1.2.2 Modified Alternative C (Offset) Configuration

The anticipated current and future LOS at unsignalized intersections in the corridor with the Modified Offset configuration is shown in **Table 7-4**. As the table illustrates, six unsignalized intersections within the corridor currently operate at LOS D or below. By 2030, 13 of the 14 unsignalized intersections may operate at LOS F during the peak hour.

### Table 7-4: Level of Service at Unsignalized Intersections Modified Alternative C (Offset) Configuration

| Unsignalized Intersection (Stop-Controlled Side Streets) | Current (2003) LOS | Future (2030) LOS |
|---|---|---|
| Spokane Avenue/Riverside | C | B |
| Spokane Avenue/9th Street | F | F |
| Spokane Avenue/8th Street | E | F |
| Spokane Avenue/6th Street | F | F |
| Spokane Avenue/5th Street | E | F |
| Spokane Avenue/4th Street | E | F |
| Spokane Avenue/3rd Street | C | F |
| Baker Avenue/3rd Street | C | F |
| Baker Avenue/4th Street | C | F |
| Baker Avenue/5th Street | D | F |
| Baker Avenue/6th Street | C | F |
| Baker Avenue/7th Street | C | F |
| Baker Avenue/8th Street | B | F |
| Baker Avenue/10th Street | C | F |

Like the Contra-Flow configuration, the poor LOS at unsignalized intersections along Spokane and Baker Avenues can be attributed to the delays that side street traffic would likely experience when attempting to cross or turn left onto these roadways during peak hours. The decrease in LOS shown for future conditions is due to the high anticipated traffic volumes using Spokane and Baker Avenues during peak hours.

## 7.1.3 Overall Performance of the Configurations

### 7.1.3.1 Contra-Flow Configuration

As noted in **Part 6.0**, the initial operational reviews show the Contra-Flow Configuration to be one of the best performing options under current and future conditions. Providing a road connection between Spokane and Baker Avenues at 7th Street efficiently accommodates corridor traffic and enhances east-west connectivity within the community. With the provision of appropriate improvements at key intersections, Spokane Avenue, 2nd Street, and Baker Avenue would operate acceptably. The anticipated performance of corridor roadways under the Contra-Flow configuration is discussed in the paragraphs below.

#### *Spokane Avenue*

The addition of a second northbound lane increases capacity on Spokane Avenue under the Contra-Flow configuration. Similarly, the southbound capacity is also increased on Spokane Avenue between 7th and 13th Streets due to the addition of a second southbound lane.

Year 2030 modeled volumes along Spokane Avenue ranged from about 10,000 north of 7th Street to about 25,000 south of 7th Street. Based on these volume projections, Spokane Avenue would approach the capacity of a four-lane roadway south of 7th Street but could adequately be served by a three-lane roadway north of 7th Street.

#### *2nd Street*

The Contra-Flow configuration generally maintains one eastbound and one westbound travel lane along 2nd Street between Spokane Avenue and Baker Avenue and provides necessary turn lanes at Spokane and Baker Avenues.

Travel demand modeling shows a 10 to 25% decrease in traffic volumes along 2nd Street when compared to the future operation of the existing corridor configuration. This decrease can largely be attributed to the addition of the 7th Street connection between Spokane Avenue and Baker Avenue. This connection provides an alternate east-west route along the corridor which helps draw traffic from 2nd Street. The travel demand model results show that the future (2030) traffic volumes along 2nd Street would not approach the typical capacity for a two-lane roadway.

### *7th Street*

The Contra-Flow configuration would provide a new east-west connection between Baker Avenue and Kalispell Avenue along 7th Street. The extension of 7th Street between Baker and Kalispell Avenues is very beneficial to traffic flows and circulation within the community. Currently, 2nd Street provides the only continuous east-west link across the community and there is no link between Spokane and Baker Avenues between 5th and 13th Streets.

When compared to future conditions without such improvements, travel demand modeling shows the 7th Street connection could result in modest (about 15-20%) decreases in traffic on portions of Spokane Avenue, on 2nd Street, and sections of Baker Avenue.

### *Baker Avenue*

The addition of a second southbound lane increases capacity on Baker Avenue under the Contra-Flow configuration. The Contra-Flow configuration does not incorporate Baker Avenue south of 7th Street; however, the operational review for this study examined existing and future conditions on this portion of Baker Avenue.

The travel demand modeling for the Contra-Flow configuration shows a 5 to 25% increase in volumes on Baker Avenue between 2nd and 7th Streets under future (2030) conditions. The increase in volumes along this section of Baker Avenue could be adequately handled by a three-lane roadway. Modeling also indicated the existing two-lane roadway on Baker Avenue between 7th and 13th Streets may approach or exceed its capacity under future (2030) conditions.

### *13th Street*

The Contra-Flow configuration relies on a new road connection between Spokane and Baker Avenues at 7th Street and does not incorporate 13th Street. However, since Baker Avenue extends south of 7th Street and 13th Street already links Spokane and Baker Avenues, the operational review for the Contra-Flow configuration acknowledged this existing condition.

The travel demand model results show a 50-60% decrease in traffic volumes along 13th Street under both existing and future conditions. This decrease in volume can largely be attributed to the provision of the 7th Street connection. The new east-west connection draws traffic that would otherwise use 2nd and 13th Street for travel between Spokane and Baker Avenues.

#### 7.1.3.2 Modified Alternative C (Offset) Configuration

Operational reviews show the Modified Offset configuration would initially provide a

high performance level but its performance declines under future conditions. The option enhances the capacity of the existing roadway network and does not provide any new roadway links that would improve traffic circulation within the community. With the provision of appropriate turn lanes at key intersections, particularly 2nd Street's intersections with Spokane and Baker Avenues, corridor roadways would operate acceptably in the future. The anticipated performance of corridor roadways under this configuration is discussed below.

### *Spokane Avenue*

The addition of a second northbound lane increases the capacity on Spokane Avenue under the Modified Offset configuration. Spokane Avenue would transition from five-lanes south of 13th Street to a three-lane roadway between 2nd and 13th Streets.

Modeling shows traffic on Spokane Avenue would likely increase by about 10 to 30% when compared with modeled volumes for the corridor without any improvements under both existing and future conditions. Future modeled traffic volumes along Spokane Avenue range from just under 10,000 vehicles south of 2nd Street to more than 18,000 vehicles between 6th Street and 13th Street. The capacity benefits and reduced delays due to the addition of another northbound travel lane would likely be responsible for the increased use of Spokane Avenue.

Considering these modeled volumes, a three-lane roadway would be adequate between 2nd and 6th Streets. However, the portion of Spokane Avenue between 6th and 13th Streets may approach or exceed the capacity of a three-lane roadway under future conditions.

### *2nd Street*

The Modified Offset configuration generally maintains one eastbound and one westbound travel lane along 2nd Street between Spokane Avenue and Baker Avenue and provides necessary turn lanes at Spokane and Baker Avenues.

Modeling for the configuration showed traffic volumes on 2nd Street between Spokane and Baker Avenues ranging from 8,000 to 9,000 vehicles under current conditions. The modeled volumes were about 10 to 15% higher than the volumes shown by the model for current conditions without any corridor improvements. Modeled future traffic volumes on 2nd Street approached 11,500 vehicles and were similar to the volumes predicted by the model for future conditions without any corridor improvements. As a general indicator, the capacity of a two-lane roadway may be approached or exceeded when volumes reach about 12,000 vehicles. The modeled future volumes for this portion of 2nd Street approach this capacity threshold.

Most of the design configurations considered in the U.S. Highway 93 Somers to Whitefish West FEIS provided two westbound lanes and one eastbound lane on 2nd

Street. Three configurations developed after the FEIS/ROD maintained 2nd Street as a two-lane facility but provided a new roadway link between Spokane and Baker Avenues at 7th Street. Since the Modified Offset configuration attempts to maintain 2nd Street as a two-lane and does not link Spokane and Baker Avenues at 7th Street, questions exist about whether this configuration can adequately accommodate corridor traffic.

The operational review shows the additional westbound through lane on 2nd Street associated with most of the configurations from the FEIS does little to help traffic operations. Due to the short distance between intersections along this portion of 2nd Street, the capacity benefit afforded by the additional travel lane is unlikely to be realized because traffic in the through lanes would frequently be delayed by turning vehicles. These delays can be avoided if turning movements are separated from through movements.

Analyses indicate traffic flows on 2nd Street can be more effectively handled by providing one through lane in each direction, prohibiting left turns at Central Avenue, and adding dedicated turn lanes at the signalized intersections at Spokane and Baker Avenues. As noted earlier, the signalized intersections along 2nd Street were shown to operate at an acceptable LOS under both current and future conditions with these modifications. This implies that 2nd Street would function adequately in the future under the Modified Offset configuration.

### *Baker Avenue*

The addition of a second southbound lane increases the capacity of Baker Avenue between 2nd and 13th Streets under this configuration.

Modeled volumes on Baker Avenue with the Modified Offset configuration were typically less than 10,500 vehicles for current conditions. This is similar to modeled volumes for Baker Avenue without any corridor improvements. The model predicted 14,000 to 20,000 vehicles on the roadway between 2nd and 13th Streets under future conditions. These volumes suggest Baker Avenue would have sections that may exceed the capacity of a three-lane roadway by 2030. Like Spokane Avenue, the capacity and reduced delays afforded by the addition of another southbound travel lane would likely increase the use of this roadway.

### *13th Street*

The Modified Offset configuration would provide a three-lane roadway (two eastbound lanes and one westbound lane) on 13th Street with additional widening at the intersections for necessary turn lanes.

The travel demand model for this configuration shows a dramatic increase in traffic volumes on 13th Street under both existing and future conditions. The model projects 13th Street to carry about 5,400 vehicles under existing conditions and about 11,500

vehicles in 2030. The modeled traffic volumes for 13th Street suggest a three-lane roadway would be adequate under future conditions.

### 7.1.4 Accommodation of Truck Traffic

Large truck traffic on US 93 adversely affects traffic operations, contributes to congestion, occasionally presents safety concerns, and is inconsistent with the desires for the downtown presented in local plans. The presence of substantial numbers of large trucks inhibits traffic flows on US 93 and affects traffic operations at signalized intersections in the downtown area. Community input during the numerous planning efforts in Whitefish has reiterated these concerns and called for the final design of US 93 to include measures that would help mitigate traffic through the community to the extent practicable.

Given that Spokane Avenue and 2nd Street are part of a state highway and on the National Highway System, commercial vehicle traffic cannot be prohibited from using these public roads.

#### 7.1.4.1 Contra-Flow Configuration

Corridor roadways would be improved to accommodate turns by large vehicles at all signalized intersections. This would involve providing dedicated turning lanes, adequate curb radii on corners, and may require some minor widening for receiving lanes. Trucks would be diverted from Spokane Avenue at 7th Street and diverted from 2nd Street at Baker Avenue. Southbound trucks on Baker would cross the new 7th Street bridge and rejoin Spokane Avenue. This configuration would reduce the number of trucks using Spokane Avenue and 2nd Street in downtown Whitefish.

#### 7.1.4.2 Modified Alternative C (Offset) Configuration

Like the Contra-Flow configuration, corridor roadways would be improved to accommodate turns by large vehicles at all signalized intersections. The only viable locations to divert trucks from Spokane Avenue and 2nd Street with this configuration would be at the intersection of Spokane Avenue and 13th Street and at the intersection of 2nd Street and Baker Avenue.

Reduced truck traffic on Spokane Avenue north of 13th Street and 2nd Street could be realized if a truck route using Baker Avenue and 13th Street was established. Whether this concept would be supported by the community is difficult to predict since it would transfer truck traffic and its associated effects from one location to another. The potential for noise-related effects to residences along the roadway south of the Whitefish River has been identified as a concern with shifting truck traffic onto Baker Avenue. Commercial areas along Baker Avenue north of 13th Street would be less sensitive to traffic-related noise.

### 7.1.5 Tradeoffs Between the Configurations

The Contra-Flow and Modified Alternative C (Offset) configurations were reviewed with respect to the second-level screening criteria for **Capacity Considerations** found in **APPENDIX C**. A summary of how these options address the criteria in this screening category is provided below.

| SECOND-LEVEL SCREENING CONSIDERATIONS | DESIGN CONFIGURATIONS UNDER FINAL REVIEW | |
|---|---|---|
| | Contra-Flow Configuration | Modified Alternative C (Offset) Configuration |
| *V/C, LOS, average travel time and delay, other measures of effectiveness* | **ADVANTAGE** | |
| *Would the option improve traffic flows for trucks through the City?* | **ADVANTAGE** | |
| *Would key intersections be designed to better accommodate truck traffic and turning movements?* | **EQUAL** | |
| *Could the option reduce the number of driveway intersections along corridor?* | **EQUAL** | |
| *Would the option potentially support increased multimodal transportation facilities?* | **EQUAL** | |

The Contra-Flow configuration was given the advantage over the Modified Alternative C (Offset) configuration because the option showed better overall performance for relevant measures of effectiveness. The operational review suggests the Contra-Flow configuration would perform better than the Modified Offset configuration in the future. The enhancement of traffic circulation within the community afforded by the 7th Street connection also gives the option an advantage over the Modified Offset configuration.

Both options provide alternate routes for trucks if such traffic were directed to use Baker Avenue instead of Spokane Avenue and 2nd Street. The Contra-Flow option would allow for trucks to use Spokane Avenue, 7th Street, and Baker Avenue for travel through the corridor. The Modified Offset configuration would require trucks to use Baker Avenue between 2nd and 13th Streets and 13th Street to travel the corridor. The advantage was given to the Contra-Flow configuration since a residential area along Baker Avenue south of 7th Street would be affected less by truck movements than with the Modified Offset configuration. Both configurations could include modifications at intersections that accommodate truck traffic and provide appropriate turn lanes.

Likewise, both configurations could be designed to better manage access along corridor roadways by combining approaches or eliminate unnecessary approaches. Corridor roadways could also be designed to accommodate pedestrian and bicyclist travel and future transit facilities.

## 7.2 Safety Considerations

### 7.2.1 Contra-Flow Configuration

This option represents an increase in overall safety on US 93 when compared to existing conditions due to the added capacity of corridor roadways and improvements at key intersections. The Contra-Flow configuration incorporates a non-typical lane arrangement (two lanes in one direction and one opposing lane) on Spokane and Baker Avenues and on 7th Street between these streets. This lane arrangement could increase the crash potential on these roadways. Increased left turn conflicts could be expected since southbound traffic on Spokane Avenue and northbound traffic on Baker Avenue would be required to cross two opposing lanes when making such turns.

New traffic signals would be installed on both Spokane and Baker Avenues at 7th Street. These new signals would introduce additional locations for traffic conflicts to occur due to large number of turning movements expected at these intersections.

The potential for congestion and conflicts between through traffic and motorists attempting to park would be eliminated with the removal of on-street parking along portions of Spokane and Baker Avenues.

Pedestrians crossing Spokane and Baker Avenues would need to cross three travel lanes instead of the two lanes. Pedestrian movements at signalized intersections on Spokane and Baker Avenues, 2nd Street, and 7th Street would continue to be regulated by signals.

### 7.2.2 Modified Alternative C (Offset) Configuration

The added capacity and intersection improvements associated with this configuration would be expected to provide an overall increase in safety within the corridor. Like the Contra-Flow option, the Modified Offset configuration employs a non-typical lane arrangement on Spokane and Baker Avenues and would have a similar potential for an increase in left turn conflicts on Spokane and Baker Avenues.

The removal of on-street parking along portions of Spokane and Baker Avenues would eliminate the potential for conflicts between through traffic and motorists attempting to park along these roadways. The high anticipated volumes of traffic on Baker Avenue south of the Whitefish River and 13th Street may make access to and from businesses and public buildings along the street more difficult and increase the potential for traffic conflicts.

A new traffic signal would be provided at Baker Avenue and 13th Street to replace the existing stop controls at the intersection. National studies suggest that, in many cases, the number of crashes and crash rates typically increase as the result of installing traffic signals at intersections. Since this intersection is already controlled by stop signs on all

legs, the change in traffic control may not result in notable changes in the number of crashes or the crash rate at the intersection.

Pedestrians crossing Spokane and Baker Avenues would need to cross three travel lanes instead of two lanes. Pedestrian crossings at signalized intersections on Spokane and Baker Avenues, 2nd Street, and 13th Street would continue to be regulated by signals.

### 7.2.3 Tradeoffs Between the Configurations

The Contra-Flow and Modified Alternative C (Offset) configurations and were reviewed against the screening criteria for the **Safety Considerations** category. A summary of how these options address the second-level screening criteria for this category is provided below.

| SECOND-LEVEL SCREENING CONSIDERATION | DESIGN CONFIGURATIONS UNDER FINAL REVIEW | |
|---|---|---|
| | **Contra-Flow Configuration** | **Modified Alternative C (Offset) Configuration** |
| *Does the option meet MDT's geometric design criteria for urban principal arterials?* | **EQUAL** | |
| *Does the option address identified common factors identified in crash analysis?* | **EQUAL** | |
| *Does the option have the potential to reduce traffic conflicts?* | **ADVANTAGE** | |
| *Would the option change the manner in which trucks are accommodated on US 93?* | **EQUAL** | |
| *Does the option have the potential to reduce the number of driveway access points along the corridor?* | **EQUAL** | |
| *Does the option include improvements to enhance safety or mobility for pedestrians and bicyclists?* | **EQUAL** | |

The Contra-Flow configuration was given an advantage over the Alternative C (Offset) configuration because the future increases in traffic along Baker Avenue north of 13th Street projected for the Offset option may increase the potential for traffic conflicts. In most other respects, the options are similar in their ability to address the screening criteria for this category.

## 7.3 Consistency with Geometric Design Criteria

### 7.3.1 Contra-Flow Configuration

The Contra-Flow could be designed to resolve geometric deficiencies within the corridor and generally comply with MDT's design guidance for National Highway System routes and urban principal arterials. The option would include the corner radii modifications necessary to facilitate truck movements at 2nd Street's intersections with Spokane and Baker Avenues.

Widening would be needed on Baker Avenue from the Whitefish River to 7th Street to accommodate the proposed road cross-section.

### 7.3.2 Modified Alternative C (Offset) Configuration

Like Contra-Flow configuration, the Modified Alternative C (Offset) configuration could be designed and constructed in a manner that resolves identified geometric deficiencies and generally complies with appropriate design guidance for urban principal arterials.

Widening would be needed on Baker Avenue from the Whitefish River southward and along 13th Street between Spokane and Baker Avenues to accommodate the proposed road cross-section consistent with MDT's Geometric Design Standards for Urban and Developed Areas.

### 7.3.3 Tradeoffs Between the Configurations

These design configurations are judged to be equal in their ability to meet MDT's appropriate design criteria and other applicable standards. Both configurations could require design exceptions for turn lane taper rates along 2nd Street and for any variances from 12-foot-wide lanes on corridor roadways.

## 7.4 Potential Environmental Effects

### 7.4.1 Contra-Flow Configuration

The most apparent potential environmental effects associated with the Contra-Flow configuration would be at 7th Street where a new bridge and road extension are proposed. The new connection at 7th Street would occur at a location where the river channel and its associated riparian zone are substantially wider than most locations in the area. Consequently, a bridge about 575 feet long would be required to cross the Whitefish River at 7th Street. The active channel of the river could be easily spanned; however, the new bridge would cross a delineated floodplain and the construction of bridge piers would impact riparian wetlands.

The existing bridge over the Whitefish River on Baker Avenue would also have to be widened or replaced to accommodate the proposed three-lane roadway associated with the Contra-Flow option.

Several federal, state, and local water regulations protecting water would apply to work in or near the Whitefish River. The following permits may be needed for building a new bridge at 7th Street and widening or replacing the existing bridge on Baker Avenue:

- "Nationwide" or Individual Section 404 Permit (Corps of Engineers)
- Stream Protection Act - SPA 124 Permit (Montana Fish, Wildlife & Parks)
- Short-term Water Quality Standard for Turbidity - 318 Authorization (MDEQ)
- Section 401 Certification (MDEQ)
- Floodplain Development Permit (City of Whitefish)
- Exemption to Critical Areas Ordinance (City of Whitefish)

While a new bridge and road connection at 7th Street can be designed in a manner that minimizes impacts to the Whitefish River and associated wetlands, ensuring compliance with applicable federal, state, and local regulations can sometimes be difficult or contentious. For example, the Corps of Engineers may resist issuing a 404 permit for the bridge project if realistic alternatives exist that could result in lesser impacts to "Waters of the U.S." including special aquatic sites and jurisdictional wetlands.

Compliance with Section 404 requires a permit from the Corps of Engineers and MDT would be obligated to consider measures to avoid or minimize impacts to jurisdictional waters or wetlands. To receive a 404 permit, MDT must demonstrate the proposed project is the least environmentally damaging practicable alternative to achieve the project's purpose. Mitigation would be required for unavoidable impacts to waters or wetlands resulting from the bridge work associated with the Contra-Flow option.

The Critical Areas Ordinance, adopted by the City in early 2008, indicates the community places a high priority on protecting water bodies and wetlands in the Whitefish area.

Contaminated sediments are also known to exist at various locations along the Whitefish River. The bridge construction associated with Contra-Flow configuration offers the potential for disturbing the sediments. It should be noted that a cleanup project is underway along the Whitefish River that may remove this contaminated material.

The improvements to Spokane Avenue, 2nd Street, and Baker Avenue (between 2nd Street and the Whitefish River) associated with the Contra-Flow option could generally be provided within the existing right-of-way for these roadways. Areas of new right-of-way acquisition are anticipated along Baker Avenue south of the Whitefish River to accommodate roadway widening. Minor amounts of right-of-way may be required at key intersections to accommodate geometric modifications and the addition of turn lanes. As noted previously, significant right-of-way limitations exist at the intersection

of 2nd Street and Baker Avenue making the provision of necessary turn lanes on all approaches difficult at this time.

The new connection at 7th Street would require new right-of-way along the bridge alignment and from lands between Spokane Avenue and Kalispell Avenue. Additionally, the Whitefish River is considered commercially navigable from Whitefish Lake to its confluence with the Stillwater River. As such, MDT would need to obtain a Land Use License or Easement from the Montana Department of Natural Resources and Conservation (DNRC) before a bridge could be constructed across the river. The Preliminary Traffic Report for the Whitefish Urban project (WGM, February 2006) shows a business on the southeast corner of 7th Street and Spokane Avenue intersection would need to be relocated due to the extension of 7th Street eastward.

The development of the three-lane roadways associated with the Contra-Flow configuration would eliminate parking along Spokane Avenue between 3rd and 6th Streets and on Baker Avenue between 2nd and 5th Streets. The addition of turn lanes on 2nd Street at Baker Avenue would result in the loss of some parking near the intersection; however, the configuration would retain some parking along both sides of 2nd Street between Spokane and Baker Avenues.

Noise levels along Baker Avenue would rise as overall traffic and truck volumes on the roadway increase. Conversely, noise levels may decrease along Spokane Avenue (north of 7th Street) and 2nd Street due to the diversion of some traffic to Baker Avenue and because fewer trucks may be in the traffic stream.

### 7.4.2 Modified Alternative C (Offset) Configuration

The Modified Alternative C (Offset) configuration would affect the Whitefish River at the existing bridge location on Baker Avenue due to the need to widen or replace the narrow structure. Various federal, state, and local water regulations protecting water would apply to work in or near the Whitefish River and the following permits may be needed for work at the highway crossing:

- "Nationwide" or Individual Section 404 Permit (Corps of Engineers)
- Stream Protection Act - SPA 124 Permit (Montana Fish, Wildlife & Parks)
- Short-term Water Quality Standard for Turbidity - 318 Authorization (MDEQ)
- Section 401 Certification (MDEQ)
- Montana Land-use License of Easement on Navigable Waters (DNRC)
- Floodplain Development Permit (City of Whitefish)
- Exemption to Critical Areas Ordinance (City of Whitefish)

Project sponsors would need to provide mitigation for unavoidable impacts to waters or wetlands resulting from the widening or replacement of the Baker Avenue bridge. As with the Contra-Flow option, areas of contaminated sediments along the river could be encountered during bridge construction.

The right-of-way needs for the Modified Offset configuration are similar to those of the Contra-Flow option on Spokane Avenue, 2nd Street, and Baker Avenue (between 2nd Street and the Whitefish River). Roadway improvements could generally be provided within the existing right-of-way for these roadways. Minor amounts of right-of-way may be required at key intersections to accommodate geometric modifications and the addition of turn lanes. Like the Contra-Flow option, right-of-way limitations exist at the intersection 2nd Street and Baker Avenue and necessary turn lanes on all approaches cannot be provided until sufficient right-of-way becomes available.

Areas of new right-of-way would be necessary along Baker Avenue between the Whitefish River and 13th Street to accommodate roadway widening. Staff from the City of Whitefish noted that right-of-way acquisition posed issues during previous reconstruction projects on Baker Avenue. Additional right-of-way would likely be needed at the intersection of Baker Avenue and 13th Street to provide necessary turn lanes and ensure corner radii are adequate for turning movements by large vehicles.

Like the Contra-Flow option, the Modified Offset configuration would result in the loss of on-street parking spaces along Spokane Avenue between 3rd and 6th Streets and along Baker Avenue between 2nd and 5th Streets. The option would retain some parking along both sides of 2nd Street as called for in local plans.

The Modified Offset configuration would divert truck traffic to Baker Avenue and noise levels along the roadway could rise. Such a diversion could decrease noise levels along Spokane Avenue as fewer trucks use the roadway.

### 7.4.3 Tradeoffs Between the Configurations

A comparison of how the Modified Alternative C (Offset) and Contra-Flow configurations address the second-level screening criteria for **Potential Environmental Effects** is shown below.

The Modified Alternative C (Offset) configuration possesses a clear advantage over the Contra-Flow option when considering screening criteria focused on the natural environment. This conclusion was reached because the Contra-Flow configuration would provide a new bridge across the Whitefish River and affect riparian habitat. The potential effects on the river at the existing crossing on Baker Avenue would be similar for both configurations. The Contra-Flow option also has the potential to encounter contaminated sediments at two Whitefish River crossing locations.

The Contra-Flow configuration has an advantage with respect to the emission of air pollutants since the operational review shows the option would result in fewer miles of travel, less overall delay, and lower fuel consumption than the Modified Offset configuration. The Modified Offset configuration has a higher potential to increase noise levels along Baker Avenue than the Contra-Flow option and has the potential to

affect sensitive noise receptors in a residential area along Baker Avenue south of 7th Street.

Both configurations would require new right-of-way acquisition at various locations within the corridor. The Modified Offset configuration was given a slight advantage over the Contra-Flow option for this screening consideration because the extension of 7th Street east of Spokane Avenue may require a business relocation.

The configurations rated similarly for most other criteria in this screening category.

| SECOND-LEVEL SCREENING CONSIDERATION | DESIGN CONFIGURATIONS UNDER FINAL REVIEW | |
|---|---|---|
| | Contra-Flow Configuration | Modified Alternative C (Offset) Configuration |
| *Would wildlife or fisheries habitat be affected?* | | **ADVANTAGE** |
| *Are wetlands or Waters of the US affected?* | | |
| *Would FEMA-designated 100-year floodplains be crossed or encroached upon?* | | |
| *Would City of Whitefish "critical areas" be affected?* | | |
| *Is there a potential for increased emissions of air pollutants?* | **ADVANTAGE** | |
| *Are noise sensitive receptors present?* | **ADVANTAGE** | |
| *Are Hazardous Materials Sites affected?* | | **ADVANTAGE** |
| *Are cultural resources affected?* | **EQUAL** | |
| *Are 4(f) Resources (historic sites, public recreation facilities or parkland) affected?* | **EQUAL** | |
| *Would the option likely cause notable socio-economic effects?* | **EQUAL** | |
| *Would on-street parking be lost?* | **EQUAL** | |
| *Would new right-of-way be required?* | | **SLIGHT ADVANTAGE** |
| *Would the option eliminate access from adjoining properties?* | **EQUAL** | |
| *Would utilities be affected?* | **EQUAL** | |

# 7.5 Feasibility and Affordability

## 7.5.1 Contra-Flow Configuration

As **Table 7-5** shows, the planning-level cost for the Contra-Flow configuration is estimated to be about $20.81 million. The costs of building a new bridge at 7th Street and extending 7th Street between Spokane and Kalispell Avenues accounts for more than $11 million of the total estimated construction cost for the configuration. The estimates include construction costs based on typical unit costs for recent MDT highway projects, a representative cost for new right-of-way, and costs for mobilization and contingencies. Please note the estimates provided are very preliminary and will likely change considerably based on more detailed engineering and design activities.

**APPENDIX E** presents a table detailing the items considered to develop planning-level cost estimates for the corridor improvements associated with this configuration.

### Table 7-5: Planning-Level Cost Estimate for Corridor Improvements—Contra-Flow Configuration

| Associated Improvements | Current Cost (in millions) |
|---|---|
| 2nd Street Improvements and Signal Upgrades | $2.02 |
| Add Capacity to the Baker Avenue Bridge | $1.45 |
| Baker Avenue Reconstruction/Upgrades | $2.07 |
| 7th Street Bridge and 7th Street Connection | $11.22 |
| Spokane Avenue Reconstruction/Upgrades* | $4.05 |
| **TOTAL** | **$20.81M** |

* Does not include the cost of replacing the culverts for the Whitefish River on Spokane Avenue with a new bridge.

Because it would be unlikely to accomplish all corridor improvements within the same timeframe, the potential future costs of implementing corridor improvements were also examined. Estimates of future project costs were calculated based on an assumed annual inflation rate of 3 percent over the next 20 years. This assumed inflation rate shows that costs could be about 19% higher than current estimates by the year 2015 and about 86% higher than current estimates by the year 2030. This means that the total cost for the improvements associated with the Contra-Flow configuration would be about $24.8 million by 2015 and about $38.7 million by the year 2030.

The Contra-Flow configuration was developed after the U.S. Highway 93 Somers to Whitefish West FEIS/ROD so the option was not examined in detail in the FEIS. MDT must complete an environmental review to document NEPA/MEPA compliance before federal and state funding can be programmed for the corridor improvements and design activities can actually begin. This review would involve a re-evaluation of the FEIS as it relates to the Whitefish Urban project area to determine if a Supplemental EIS is needed. FHWA, in consultation with MDT, would need to make a decision about the appropriate

environmental review process and would need to revise the ROD for the Whitefish Urban project area to include the improvements associated with the Contra-Flow configuration.

Building a new bridge at 7th Street and widening or reconstructing the existing bridge on Baker Avenue would be subject to federal and state regulations protecting water quality and the City's Critical Areas Ordinance. Securing environmental permits for a new 7th Street bridge may also be complicated if other options (like the Modified Offset configuration) are viable and could reduce impacts to the river and wetlands.

### 7.5.2 Modified Alternative C (Offset) Configuration

The Modified Alternative C (Offset) configuration would require about 1.7 miles of reconstruction along Spokane Avenue and 2nd Street, on Baker Avenue between 2nd and 13th Streets, and on 13th Street between Baker and Spokane Avenues. The option includes the widening or replacement of the existing bridge across the Whitefish River on Baker Avenue. Signal upgrades or replacements would be needed at four locations and a new signal would be required at Baker and 13th Street.

As shown in **Table 7-6**, the planning-level cost for the Modified Alternative C (Offset) configuration is $10.86 million. The estimates for corridor improvements include construction costs based on typical unit costs for recent MDT highway projects, a representative cost for right-of-way, and costs for mobilization and contingencies.

### Table 7-6: Planning Level Cost Estimate for Corridor Improvements—Modified Alternative C (Offset) Configuration

| Associated Improvements | Current Cost (in millions) |
|---|---|
| 2nd Street Improvements and Signal Upgrades | $2.02 |
| Add Capacity to the Baker Avenue Bridge | $1.45 |
| Baker Avenue and 13th Reconstruction and Upgrades | $3.79 |
| Spokane Avenue Reconstruction/Upgrades* | $3.60 |
| **TOTAL** | **$10.86 M** |

* Does not include the cost of replacing the culverts for the Whitefish River on Spokane Avenue with a new bridge.

**APPENDIX E** presents the items considered to develop the planning-level cost estimates for the corridor improvements associated with this configuration.

Based on an assumed annual inflation rate of 3 percent over the next 20 years, the total cost of the Modified Alternative C (Offset) Configuration improvements would be more than $12.9 million by 2015 and be nearly $20.2 million by the year 2030.

The Alternative C (Offset) configuration was evaluated in detail in the U.S. Highway 93 Somers to Whitefish West FEIS; however, the option considered in the FEIS included

three travel lanes on 2nd Street instead of two lanes as proposed with the Modified Offset configuration. Like the Contra-Flow option, advancing this configuration would require a re-evaluation of the FEIS focused on the Whitefish Urban project area to determine the need for a Supplemental EIS and a future revision to the ROD.

The environmental permitting process for the Modified Offset configuration would be focused on the potential effects of widening or replacing the existing bridge on Baker Avenue.

### 7.5.3 Tradeoffs Between the Configurations

The summary below indicates how the Contra-Flow and Modified Alternative C (Offset) configurations address the second-level screening criteria for **Feasibility and Affordability Considerations**.

| SECOND-LEVEL SCREENING CONSIDERATION | DESIGN CONFIGURATIONS UNDER FINAL REVIEW | |
|---|---|---|
| | Contra-Flow Configuration | Modified Alternative C (Offset) Configuration |
| *Does a precedent exist for similar strategies?* | **EQUAL** | |
| *Could the option be constructed under traffic?* | **EQUAL** | |
| *Is the option potentially fundable by FHWA/MDT?* | **EQUAL** | |
| *What is the relative cost of the option?* | | **ADVANTAGE** |
| *Does the option include components or design features that would likely result in agency or public opposition or generate controversy?* | | **ADVANTAGE** |
| *Relative expense and ease of procedural requirements for MDT/FHWA to advance the option through a future NEPA process.* | | **SLIGHT ADVANTAGE** |

The non-typical lane arrangement for Spokane and Baker Avenues (two lanes in one direction and one opposing lane) associated with the Contra-Flow and Modified Offset configurations provide for added roadway capacity. However, similar three-lane roadways have not been previously used in Whitefish.

With proper sequencing, detours, and traffic controls, both options could be constructed with minimal delays to facility users.

The Modified Alternative C (Offset) configuration has clear advantages over the Contra-Flow configuration with respect to the overall cost of making corridor improvements.

Planning-level cost estimates show the Contra-Flow configuration would be nearly twice as expensive as the Offset configuration due to the provision of the new bridge and roadway connection at 7th Street. It is assumed that the lower overall cost of the option could facilitate the funding and implementation of the corridor improvements.

The annual maintenance costs associated with the Modified Offset configuration may be slightly higher than those for the Contra-Flow option due to the difference in overall roadway lengths of the options. However, the Modified Offset configuration would have lower bridge maintenance costs since it does not include a bridge at 7th Street and has fewer traffic signals to maintain than the Contra-Flow option.

Procedurally, the Modified Offset configuration may have a slight advantage over the Contra-Flow option since the option was evaluated previously in the U.S. Highway 93 Somers to Whitefish West FEIS. However, a re-evaluation of the FEIS for the Whitefish Urban project area would initially be required with both options to determine the need for a Supplemental EIS. Environmental permitting for the Offset configuration may also be less difficult or contentious than for Contra-Flow option since it does not include a bridge at 7th Street.

## 7.6 Compatibility with Local Plans and Ideals

### 7.6.1 Contra-Flow Configuration

The Contra-Flow configuration was developed after the U.S. Highway 93 Somers to Whitefish West FEIS/ROD to address concerns associated with the ROD Preferred Alternative about the lane configuration on 2nd Street, parking, and circulation in downtown Whitefish. The option also provides an alternate routing for trucks to pass through the downtown via a bridge at 7th Street. While the concept presented in this configuration does not exactly match the recommendations from local plans, the option retains 2nd Street as a two-lane roadway with some on-street parking along both sides of the street and provides for two-way traffic flows on Spokane and Baker Avenues. Both of these elements are very important aspects of local plans and desired by downtown business owners.

Comments received during various planning efforts in the community also shows a range of opinions about the viability of providing a new bridge at 7th Street as called for in the Contra-Flow configuration. Some residents have expressed concerns over the potential impacts to riparian lands and the high costs of building such a structure. Comments in favor of the bridge point out the broader community circulation benefits possible by making a roadway connection at 7th Street.

### 7.6.2 Modified Alternative C (Offset) Configuration

The Alternative C (Offset) configuration evaluated in the FEIS was developed more than a decade before the completion of the Whitefish Downtown Business District Master

Plan and the City's Growth Policy. As a result, the FEIS configuration does not reflect many of the community's more recent concerns and ideas about redevelopment in the downtown area, particularly on 2nd Street.

However, the Modified Alternative C (Offset) configuration better reflects recommendations from local plans. The Modified Offset configuration provides for two-way traffic flows on Spokane Avenue, 2nd Street, and Baker Avenue in the downtown. The option generally maintains 2nd Street as a two-lane facility with some on-street parking between Spokane and Baker Avenues.

### 7.6.3 Tradeoffs Between the Configurations

A comparison of how well the two configurations address the second-level screening criteria associated with the **Compatibility with Local Plans and Ideals** screening category is provided below.

| SECOND-LEVEL SCREENING CONSIDERATION | DESIGN CONFIGURATIONS UNDER FINAL REVIEW | |
|---|---|---|
| | Contra-Flow Configuration | Modified Alternative C (Offset) Configuration |
| *Would the option be compatible with or support recommendations from local plans?* | **ADVANTAGE** | |
| *Would the option be consistent with the City of Whitefish's Bicycle and Pedestrian Master Plan?* | **EQUAL** | |
| *Would enhancements be consistent with features recommended in local plans or desired by the City of Whitefish and local residents?* | **EQUAL** | |
| *Does the option provide new and desirable connections to local street network?* | **ADVANTAGE** | |
| *Does the option have the potential to enhance the appearance of the corridor?* | **EQUAL** | |

The overall advantage has to be given to the Contra-Flow configuration since the option was developed based on the input received and recommendations contained in the Whitefish Downtown Business District Master Plan and the City's Growth Policy. As a result, the Contra-Flow configuration is more responsive to local planning concepts than the Modified Offset configuration.

The Contra-Flow option also has an advantage over the Modified Offset configuration since it enhances traffic circulation within the community by including a bridge and roadway to connect Baker, Spokane, and Kalispell Avenues along 7th Street. Enhancing

roadway connectivity within Whitefish was a key consideration in the recent development of the Whitefish Transportation Plan.

Both configurations could be designed to include many of the desired trail connections and streetscape amenities called for in local plans.

# 8.0 FUTURE PROJECT CONSIDERATIONS

# 8.0 FUTURE PROJECT CONSIDERATIONS

Both the Contra-Flow and Modified Alternative C (Offset) Configurations maintain US 93 traffic on Spokane Avenue and 2nd Street, incorporate portions of Baker Avenue between 2nd and 13th Street, and rely on east-west connections at either 7th or 13th Streets to help meet future travel demands within the corridor. The following sections discuss general operational recommendations for each configuration and highlight future project development considerations for improvements to the US 93 corridor.

Design recommendations from past planning efforts—including the U.S. Highway 93 Somers to Whitefish West FEIS/ROD and local plans—were considered in the identification of project development considerations for corridor roadways. Since this study is a planning-level document, it does not provide details about specific design items or features. These design details would be identified during project development activities for improvement projects. A desired sequencing for making major corridor improvements associated with each configuration is presented.

## 8.1 Spokane Avenue Improvements

### 8.1.1 General Operational Recommendations

Both the Contra-Flow and Modified Alternative C (Offset) Configurations would provide a three-lane roadway accommodating two northbound driving lanes and one southbound driving lane along Spokane Avenue north of 7th Street.

South of 7th Street, the Contra-Flow Configuration provides an additional travel lane for southbound traffic and dedicated turn lanes at the 13th Street intersection. The Modified Alternative C (Offset) Configuration maintains a three-lane roadway south of 7th Street and includes widening for dedicated turn lanes at the 13th Street intersection.

### 8.1.2 Project Development and Design Considerations

- Preserving boulevards and the mature trees along Spokane Avenue north of 6th Street are important to local residents.

- The use of raised, landscaped medians and left turn provisions for northbound traffic may be desirable at several locations to serve commercial uses west of Spokane Avenue between 7th and 13th Streets.

- Local plans include recommendations for design elements and streetscape enhancements along portions of Spokane Avenue. Coordination with the City will be necessary during the development of improvements to consider the recommendations and determine the extent to which they can be incorporated without adversely affecting the future operation of US 93 and funding availability.

- The large-diameter culverts conveying the Whitefish River beneath Spokane Avenue have considerable remaining service life; however, local preferences are to install a new bridge when the culverts are replaced.

- Consideration must be given to whether the pavement on Spokane Avenue needs to be reconstructed or can be sufficiently rehabilitated by milling the existing surface and installing a new asphalt overlay. Reconstruction would likely ensure the roadway is capable of withstanding the demands of traffic for well over 25 years with the pavement preservation activities routinely performed by MDT. Assuming there are no significant foundation problems, milling and overlaying the existing pavement may add 10-15 years of life to the roadway.

## 8.2 2nd Street Improvements

### 8.2.1 General Operational Recommendations

The Contra-Flow and Modified Alternative C (Offset) Configurations would maintain 2nd Street as a two-lane facility but include widening for dedicated turn lanes at 2nd Street's intersections with Spokane and Baker Avenues. Both configurations would improve the street within its existing "footprint" and retain some on-street parking along both sides of 2nd Street.

### 8.2.2 Project Development and Design Considerations

- Providing appropriate dedicated turn lanes on 2nd Street at the intersections of Spokane and Baker Avenues and prohibiting left turns from 2nd Street onto Central Avenue is required to facilitate traffic operations with either option.

- With either configuration, there is a need to evaluate traffic signals and upgrade them as required bringing the system to current standards. Making such improvements would likely require replacing the existing traffic signals and controllers at each intersection, adding sensors to detect vehicles, and interconnecting the new signals to coordinate the operation of the three intersections along 2nd Street. An updated traffic study would needed at these intersections to obtain current peak hour turning movement data for the analyses required to establish appropriate signal timings.

- Both configurations require minor right-of-way acquisitions on the southeast corner of the intersection of 2nd and Spokane and the southwest and southeast corners of 2nd and Baker to implement intersection modifications and accommodate truck turning movements.

- A 2006 District Court ruling prohibits MDT from acquiring right-of-way through condemnation from the First American Bank property (located on the northwest

corner of the 2nd and Baker intersection). Since the Court's determination is conclusive on the issue, future improvements to the intersection of would have to be completed without acquiring any right-of-way from American Bank.

- Roadway widening for the recommended right turn lanes at 2nd Street and Baker Avenue cannot occur until the City Hall property on the northeast corner of the intersection is redeveloped and additional right-of-way becomes available. While the City has plans to relocate from the existing City Hall building, when and if the property will be redeveloped is uncertain at this time. Adding left turn lanes for east and westbound traffic will benefit operations at the intersection; however, analyses show operations at the intersection of 2nd Street and Baker Avenue will continue to operate at LOS D into the future until the right turn lanes are provided.

- Local plans include recommendations for desired design elements and streetscape enhancements along 2nd Street. Coordination with the City of Whitefish will be necessary during the development of improvements for 2nd Street to consider the recommendations and determine the extent to which they can be incorporated without adversely affecting the future operation of US 93 and impact funding availability.

- Consideration must be given to whether the pavement on 2nd Street needs to be fully reconstructed or can be sufficiently rehabilitated by milling the existing surface and installing a new asphalt overlay.

## 8.3 Baker Avenue Improvements

### 8.3.1 Operational Recommendations

The Contra-Flow and Modified Alternative C (Offset) Configurations provide a three-lane roadway with two southbound driving lanes and a northbound driving lane between 2nd and 7th Streets. The Contra-Flow Configuration then directs corridor traffic east to Spokane Avenue along a new 7th Street connection.

The Modified Alternative C (Offset) option continues the three-lane configuration on Baker Avenue south of 7th Street to 13th Street.

### 8.3.2 Project Development and Design Considerations

- Areas of new right-of-way acquisition are anticipated along Baker Avenue south of the Whitefish River to accommodate roadway widening.

- There is a need to add capacity (roadway width) to the existing bridge over the Whitefish River on Baker Avenue by either widening the existing structure or building a new bridge.

- Areas of new right-of-way acquisition are anticipated along Baker Avenue south of the Whitefish River to accommodate roadway widening.

- The Modified Alternative C (Offset) configuration would require widening to provide dedicated turn lanes at Baker Avenue's intersection with 13th Street.

- The City's Transportation Plan has identified the intersection of Baker Avenue and 13th Street as a potential location for a new traffic signal. The Modified Alternative C (Offset) configuration would incorporate a new traffic signal and dedicated turn lanes at the intersection of Baker Avenue and 13th Street.

- Design features like landscaped boulevards and decorative street lighting exist on Baker Avenue between 10th and 13th Streets.

- Consideration must be given to whether the pavement on affected sections of Baker Avenue needs to be reconstructed or rehabilitated by milling the existing surface and installing a new asphalt overlay.

## 8.4 7th Street Construction

### 8.4.1 Operational Recommendations

The Contra-Flow Configuration would provide a three-lane roadway accommodating two eastbound driving lanes and a westbound driving lane between Spokane and Baker Avenues. The Contra-Flow Configuration would also extend 7th Street between Spokane and Kalispell Avenues.

The Modified Alternative C (Offset) Configuration would not provide a roadway connection between Spokane and Baker Avenues at 7th Street or extend 7th Street east of Spokane Avenue to Kalispell Avenue.

### 8.4.2 Project Development and Design Considerations

- The installation of traffic signals and the addition of appropriate turn lanes would be required at 7th Street's intersections with Spokane and of Baker Avenues.

- New right-of-way (including a business acquisition) would be needed to accommodate the construction of 7th Street between Spokane and Kalispell Avenues and the new 7th Street river crossing.

# 8.5 13th Street Improvements

## 8.5.1 Operational Recommendations

The Modified Alternative C (Offset) Configuration would provide a three-lane roadway accommodating one westbound driving lane and two eastbound driving lanes between Spokane and Baker Avenues.

The Contra-Flow Configuration would not require any improvements to 13th Street since 7th Street would serve as the east-west connection between Spokane and Baker Avenues.

## 8.5.2 Project Development and Design Considerations

- As noted previously, the Modified Alternative C (Offset) Configuration would incorporate a new traffic signal and dedicated turn lanes at the intersection of Baker Avenue and 13th Street.

- Additional right-of-way, most notably on the northeast corner of the intersection of Baker Avenue and 13th Street, would likely be needed to accommodate roadway widening for dedicated turn lanes. The City of Whitefish has been approached regarding a project to construct a new gas station on the northeast corner of the intersection of Baker Avenue and 13th Street.

- Commercial buildings along 13th Street between Spokane and Baker Avenues limit available right-of-way.

- Consideration must be given to whether the pavement on 13th Street between Spokane and Baker Avenues needs to be reconstructed or can be adequately rehabilitated by milling and overlaying the roadway.

# 8.6 Pedestrian and Bicyclist Facilities

Within the corridor, sidewalks currently parallel both sides of Spokane Avenue, 2nd Street, Baker Avenue and 13th Street. Marked pedestrian crosswalks exist at four signalized intersections along Spokane Avenue and 2nd Street, at 4th and 5th Streets on Spokane Avenue, and at four locations along Baker Avenue.

Spokane and Baker Avenues between 2nd and 13th Streets and 2nd Street are designated as proposed bicycle routes in the City's Bicycle and Pedestrian Master Plan. 13th Street is not part of a designated bicycle route. Only Baker Avenue between 10th and 13th Streets has marked bicycle lanes along each side of the roadway. Bicyclists must use the roadway or its shoulders/parking areas for travel on other corridor roadways.

Both configurations seek to perpetuate and/or enhance existing pedestrian and bicyclist facilities within the corridor.

### 8.6.1 Design and Project Development Considerations

- Consider the policies and recommendations for pedestrian and bicyclist facilities within the corridor found in local plans and coordinate with the City about how future corridor improvements can facilitate their implementation.

- Local preferences are to install a new bridge and provide grade-separated pedestrian/bicyclist trail connections at the Whitefish River crossing on Spokane Avenue when the existing culverts are replaced.

- Accepted design guidance for bicycle facilities indicates that on streets with two-way traffic, a one-way bicycle lane should be provided on each side of the roadway. With this in mind, consider providing 5-foot wide bicycle lanes along each side of Spokane and Baker Avenues.

- Right-of-way limitations, the need to accommodate through traffic and turning movements, and the desire to retain some on-street parking makes it difficult to add bicycle lanes along both sides of 2nd Street between Spokane and Baker Avenues.

- Ensure that sidewalks at least 5-feet wide are perpetuated along each side of corridor roadways and modify or install curb ramps at intersections where needed to meet current Americans with Disabilities Act (ADA) requirements.

## 8.7 Improvement Priorities and Suggested Sequencing

Since implementing a single comprehensive project to upgrade the entire Whitefish Urban corridor and other affected roadways is unlikely, this study outlines a desired sequencing for implementing corridor improvements under each design configuration.

The recommended sequencing recognizes that federal and state funding for corridor improvements will likely be limited over the foreseeable future. Additionally, providing left turn lanes for eastbound and westbound traffic at the intersection at 2nd Street and Baker Avenue and installing a new coordinated signal system, are high priorities for the City of Whitefish and can notably enhance the operation of the corridor. Another consideration for determining a desired sequencing for improvements was the need to have adequate alternate routes for local and through traffic in place during reconstruction activities on Spokane and Baker Avenues.

Given the funding situation currently facing MDT and other uncertainties related to the timing of downtown redevelopment projects, there was no attempt to identify when the recommended corridor improvements should be implemented over the planning

horizon for this study. It is recognized that the funding situation could change or other factors may ultimately influence the how corridor improvements were implemented.

The following general priorities were established for implementing corridor-related improvements under the configurations of interest:

**CONTRA-FLOW CONFIGURATION**

**PRIORITY 1: 2nd Street Improvements and Signal Upgrades**
**PRIORITY 2: Add Capacity to the Baker Avenue Bridge**
**PRIORITY 3: Baker Avenue Reconstruction/Upgrades**
**PRIORITY 4: 7th Street Bridge and 7th Street Connection**
**PRIORITY 5: Spokane Avenue Reconstruction/Upgrades**

**MODIFIED ALTERNATIVE C (OFFSET) CONFIGURATION**

**PRIORITY 1: 2nd Street Improvements and Signal Upgrades**
**PRIORITY 2: Add Capacity to the Baker Avenue Bridge**
**PRIORITY 3: Baker Avenue and 13th Reconstruction/Upgrades**
**PRIORITY 4: Spokane Avenue Reconstruction/Upgrades**

The suggested sequencing would help address some of the long-standing operational problems at the intersection of 2nd Street and Baker Avenue intersection and enhance traffic flows along 2nd Street. Traffic would likely have to be detoured off 2nd Street at Spokane and Baker Avenues at times to accommodate to reconstruction activities.

Adding capacity at the bridge across the Whitefish River on Baker Avenue would eliminate a "bottleneck" created by the existing structure. A project to widen the Baker Avenue bridge would provide a new structure capable of accommodating the preferred lane configuration on Baker Avenue under either configuration. This would allow the structure to be in place before reconstruction efforts were undertaken on the remainder of the street. Traffic could be detoured around the Baker Avenue bridge project area by using Spokane Avenue and 2nd Street or 7th Street and Karrow Avenue to access West 2nd Street.

Adding the 7th Street bridge and 7th Street connection as called for under the Contra-Flow Configuration is an improvement that could happen at almost any time during implementation. However, some of the operational benefits made possible by making this new street connection would not be realized until after capacity improvements were completed on Baker Avenue. Having the 7th Street bridge in place would provide opportunities for detours around work areas during the reconstruction of Spokane Avenue.

Under the Modified Alternative C (Offset) Configuration, rebuilding Baker Avenue and 13th Street may best be accomplished in two phases using 7th Street as a possible split point to help minimize traffic disruptions. Work north of 7th Street could be accomplished relatively quickly since the recommended improvements north of the

bridge would all occur within the existing "footprint" of Baker Avenue. South of the river, Baker Avenue and 13th Street require right-of-way acquisition and more extensive reconstruction work. Phasing the work on Baker Avenue in this manner would allow for the opportunity to use 7th Street and Karrow as a detour route around the work area. Other than using Spokane Avenue, detour options are limited for Baker Avenue in the area south of the Whitefish River.

Because a specific timeline for implementing improvement projects has not been identified, periodic monitoring of corridor conditions is important to help determine when further improvements or actions might be needed. The monitoring effort could be focused on readily available measures of performance like traffic volumes and crash data and tied to performance thresholds that indicate the need for action. The City's review of new developments or major redevelopment proposals and MDT's System Impact Assessment Process (SIAP) reviews could also be used to help signal the need for corridor improvements.

# 9.0 FUNDING AND IMPLEMENTING CORRIDOR IMPROVEMENT PROJECTS

# 9.0 FUNDING AND IMPLEMENTING CORRIDOR IMPROVEMENTS

Potential funding sources for improvements to the US 93 corridor through Whitefish and other considerations relevant to the implementation of future projects are discussed in this Part. The primary funding sources for corridor improvements will be federal and state funds. However, other local government funding sources are described because such funds could help accomplish portions of the proposed projects or be used to implement off-system projects that would indirectly benefit the US 93 corridor.

**Part 9.0** also discusses fiscal constraint requirements associated with planning for corridor improvements, regionally significant projects, and highlights NEPA/MEPA compliance activities needed to advance corridor improvement projects.

## 9.1 Potential Federal and State Funding Sources

The primary Federal and state funding sources for constructing highway improvements within the corridor are identified and briefly described on the following pages. This discussion is focused on programs developed for the distribution of Federal and State transportation funding administered by the FHWA and MDT. A description of each potential funding source and its applicability to corridor roadways is provided in the following sections.

### 9.1.1 National Highway System (NHS) Funds

Spokane Avenue and 2nd Street are part of the non-interstate National Highway System (NHS) in Montana. As such, the primary funding source for improvements to these streets is NHS Program funds. NHS funds are federally-apportioned to Montana and allocated based on system performance by the Montana Transportation Commission. Currently, the federal share for NHS projects is 86.58% and the State is responsible for the remaining 13.42% of project costs. The Highway State Special Revenue Account provides the source of the State's share of NHS project costs.

Activities eligible for this funding include construction, reconstruction, resurfacing, restoration, and rehabilitation of segments of the NHS. Operational improvements and highway safety improvements are eligible for the use of NHS funds. Other miscellaneous activities that may qualify for NHS funding include research, planning, carpool projects, bikeways, and pedestrian walkways. The Montana Transportation Commission establishes priorities for the use of NHS funds and projects are let through a competitive bidding process.

Within the Missoula District, NHS routes consist of US 93, US 2, US 12, and Montana Highways 40 and 200. Based on historical funding allocations, the Missoula District <u>may</u> receive between $600 million and $800 million in NHS funds over the next 20 years.

Projects currently under development and prioritized by the Missoula District have construction costs estimated to range from $800 million to $850 million in current dollars.

The most notable project on the NHS in the Whitefish area is MDT's Whitefish West project that begins on 2nd Street just west of Baker Avenue and follows US 93 to west of Twin Bridges Road (Reference Post 133). This project is currently in the design stage and the most recent estimates place the total project cost at nearly $38 million. Given the high cost of the project, MDT would likely split the project into several phases to better accommodate construction and anticipated funding. Funding for the project is unlikely before 2011; however, if money becomes available it could be moved ahead very quickly.

Although the Whitefish West section of US 93 is already in the design stage, it is not a certainty that those improvements would be built prior to work within the urban corridor. The timing of future construction on US 93 is dependent upon funding availability. For example, if right-of-way acquisition or other concerns delay work in the Whitefish West section, the District could change priorities and divert funding to work in the Whitefish Urban corridor.

### 9.1.2 Urban Highway System (STPU) Funds

The Federal and State funds available under this program are used to finance transportation projects on the state-designated Urban Highway System. The Urban Highway System is described under 60-2-125(6), Montana Codes Annotated (MCA), as those highways and streets that are in and near incorporated cities with populations of over 5,000 and within urban boundaries established by the MDT, that have been functionally classified as either urban arterials or collectors, and that have been selected by the Montana Transportation Commission, in cooperation with local government authorities, to be placed on the Urban Highway System.

State law (60-3-211, MCA) guides the allocation of funds to projects on the Urban Highway System in the fifteen urban areas (3 Urbanized Areas, and 12 Small Urban Areas) through a statutory formula based on each area's population compared to the total population in all urban areas. As with NHS funds, Urban funding is 86.58% Federal with a 13.42% non-federal match typically provided from the Special State Revenue Account.

Urban funds are used primarily for major street construction, reconstruction, and traffic operation projects on the State-designated Urban Highway System, but can also be used for any project that is eligible for the Surface Transportation Program (STP) under Title 23 of the U.S. Code. Priorities for the use of Urban funds are established at the local level through local planning processes with final approval by the Transportation Commission.

Within urban boundary for Whitefish, Baker Avenue between 2nd Street and 7th Street,

Baker Avenue north of 2nd Street, Wisconsin Avenue, East Lakeshore Drive, and a portion of Big Mountain Road are on the Urban Highway System.

Whitefish currently receives an allocation of about $171,000 in Urban funds (Federal plus State matching funds) each year. MDT's Planning Division shows Whitefish's Federal Fiscal Year 2010 funding balance is about $1,305,000.

### 9.1.3 Community Transportation Enhancement Program (CTEP)

Federal law requires that at least 10% of STP funds must be spent on transportation enhancement projects. The Montana Transportation Commission created the Community Transportation Enhancement Program (CTEP) in cooperation with the Montana Association of Counties (MACO) and the Montana League of Cities and Towns to comply with this Federal requirement.

CTEP is a unique program that distributes funding to local and tribal governments based on a population formula and provides project selection authority to local and tribal governments. The Transportation Commission provides final approval to CTEP projects within the State's right-of-way. The Federal share for CTEP projects is 86.58% and the Local and tribal governments are responsible for the remaining 13.42%.

CTEP projects must fit into one or more of 12 enhancement categories. Within the US 93 urban corridor, program funds could potentially be used to help pay for pedestrian and bicycle facilities, streetscape enhancements, landscaping, and other scenic beautification improvements.

Projects must be submitted by the local government to the MDT, even when the project has been developed by another organization or interest group. Project proposals must include evidence of public involvement in the identification and ranking of enhancement projects. Local governments are encouraged to use their planning boards, where they exist, for the facilitation of public participation or a special enhancement committee. The MDT staff reviews each project proposal for completeness and eligibility and submits them to the Transportation Commission and the FHWA for approval.

The City of Whitefish has a current balance of approximately $266,300 and the estimated 2010 allocation is about $29,500 (Federal). The balance represents funds not obligated towards a selected project.

### 9.1.4 On-System Bridge Replacement and Rehabilitation Program

The On-System Bridge Program receives 65% percent of the Federal Highway Bridge Replacement and Rehabilitation Program (HBRRP) funds. Projects eligible for funding under the On-System Bridge Program include all highway bridges on the State system. The bridges are eligible for rehabilitation or replacement. In addition, painting and

seismic retrofitting are also eligible under this program. MDT's Bridge Bureau assigns a priority for replacement or rehabilitation of structurally deficient and functionally obsolete structures based upon sufficiency ratings assigned to each bridge. A structurally deficient bridge is eligible for rehabilitating or replacement; a functionally obsolete bridge is eligible only for rehabilitation; and a bridge rated as sufficient is not eligible for funding under this program.

The bridge over the Whitefish River on Baker Avenue—identified as structure M15120000+00101 according to MDT's Bridge Management System—was built in 1977 and is not considered to be deficient based on its sufficiency rating. However, the existing structure has a roadway width of only 29 feet and poses a limitation for future widening at this location on Baker Avenue. The bridge falls within the portion of Baker Avenue included on the Urban Highway System but MDT's Bridge Management System does not presently list this structure as an Urban System bridge.

### 9.1.5 Montana Air & Congestion Initiative (MACI) – Discretionary Program

The MACI – Discretionary Program provides funding for projects in areas designated non-attainment or recognized as being "high-risk" for becoming non-attainment. Since 1998, MDT has used MACI-Discretionary funds to address CO and PM-10 problems in non-attainment and high-risk communities across Montana. District Administrators and local governments nominate projects cooperatively. Projects are prioritized and selected based on air quality benefits and other factors. The most beneficial projects to address these pollutants have been sweepers and flushers, intersection improvements and signal synchronization projects.

While there is potential for the use of MACI funds to help implement some corridor improvements, such funding may not be viable for improvements like those recommended for 2nd Street since work would focus on intersection improvements. MACI project selection is typically focused on those most beneficial to address the pollutants in the area and intersection improvements usually have the benefit of lowering overall CO emissions. Because Whitefish is not a high-risk area for CO, it is unlikely MACI funds would be identified as a potential funding source for intersection improvements projects.

### 9.1.6 Urban Pavement Preservation

The Urban Pavement Preservation Program is a state program that addresses urban highway system preservation needs. The program is funded from federal Equity Bonus funds that are appropriated to each State to ensure that each State receives a specific share of the aggregate funding for major highway programs. The program funds cost-effective treatments for the preservation of the existing Urban Highway System to prevent deterioration while maintaining or improving the functional condition of the system without increasing structural capacity.

The Transportation Commission determines the annual funding level for this program for preservation projects in the fifteen urban areas. Activities eligible for this funding include pavement preservation treatments on the Urban Highway System based on needs identified through a locally developed and maintained pavement management system. Priorities are developed by MDT Districts based on the local pavement management system outputs and consideration of local government nominations with final approval by the Transportation Commission.

## 9.2 Potential Local Funding Sources

### 9.2.1 TIGER Discretionary Grant

The Transportation Investment Generating Economic Recovery (TIGER) grant program, funded through the American Recovery and Reinvestment Act of 2009 (ARRA), targets national and regional transportation projects that foster job creation, show strong economic benefits, and promote communities that are safer, cleaner and more livable. No direct local matching funds are required for the grants.

The City of Whitefish submitted an application and was awarded a $3.5 million grant for improving 2nd Street between Spokane and Baker Avenues. The grant is intended for full reconstruction of the roadway, upgrades to sewer and water lines, installation of a new coordinated signal system, the addition of left turn lanes, streetscape enhancements, and modifications to parking along 2nd Street. The project supports the City's efforts to revitalize existing infrastructure and encourage long-term economic growth in downtown Whitefish.

### 9.2.2 State Fuel Tax Apportionment to the City of Whitefish

Under 15-70-101, MCA, Montana currently assesses a tax of $0.27 per gallon on gasoline and diesel fuel used for transportation purposes. Each incorporated city and town receives a portion of the total tax funds allocated to cities and towns based on:

1. The ratio of the population within each city and town to the total population in all cities and towns in the State;

2. The ratio of the street mileage within each city and town to the total street mileage in all incorporated cities and towns in the State. The street mileage is exclusive of the Federal-Aid Interstate and Primary System.

All fuel tax funds allocated to the city governments must be used for the construction, reconstruction, maintenance, and repair of rural roads or city streets and alleys. The funds may also be used for the share that the city or county might otherwise expend for proportionate matching of Federal funds allocated for the construction of roads or streets on the Primary, Secondary, or Urban Systems. Priorities for these funds are established by the cities and counties receiving them.

Revenues are generated through State gasoline taxes apportioned by the State of Montana and allocations to local governments vary each year. Within incorporated areas, the allocation amount depends upon population and the miles of streets and alleys in the City. For State Fiscal Year 2010, the allocation of state fuel tax funds to the City of Whitefish was about $156,000.

### 9.2.3 City of Whitefish General Fund

This fund provides revenue for most major city functions like the administration of local government, and the departments of public services, including police, fire, and parks. Revenues for the fund are generated through the general fund mill levy on real and personal property and motor vehicles; licenses and permits; state and federal intergovernmental revenues; intergovernmental fund transfers; and charges for services.

Minor transportation-related services are supported by this fund through the City of Whitefish Police Department. The Police Department is responsible for enforcing traffic laws on the street system.

### 9.2.4 Resort Tax Funds

The City of Whitefish is one of seven incorporated areas within Montana that collects "resort" taxes. Resort communities are incorporated towns with populations less than 5,500 that meet specific resort qualifications defined by the State. The fundamental idea behind resort taxes is to allow places that get a lot of tourism to pay for the wear-and-tear on local infrastructure.

In Whitefish, the resort tax amounts to a 2% percent tax on businesses such as restaurants, hotels and tourist-oriented retail stores. Resort tax revenue is also used as a major source of infrastructure funding in resort communities. The City of Whitefish earmarks 65% of annual resort tax revenue for street improvement projects, 25% goes to tax relief and the last 10% is divided between contributing businesses and local parks. During the fiscal year 2007, the City of Whitefish collected $1.6 million from resort tax revenue. The resort tax program will continue through the year 2023.

It should be noted that the most recent information from the U.S. Bureau of the Census, estimates the population of the City of Whitefish to be nearly 8,300 residents. This population substantially exceeds the upper population threshold for resort communities of 5,500 established by State law.

The 2009 Legislature considered a bill to adjust the upper threshold population level requirement for resort communities. The Legislature did not change the upper population limit but revised the law to consider the population at the time of the most recent federal census instead of the federal population estimates produced annually. This means, the City of Whitefish has the authority to collect resort tax until the data from the 2010 census becomes available. Because the resort tax comprises an important

source of local funds, it is likely the 2011 Legislature will be asked to once again consider increasing the population threshold for resort communities.

### 9.2.5 Transportation Impact Fees

Impact fees are increasingly being considered as a potential method for financing transportation infrastructure needs. Presently, the only a handful of communities in the state utilize impact fees programs. However, other local governments in Montana including the City of Whitefish are in the process of considering and implementing impact fee programs. Developer exactions and fees allow growth to pay for itself. The developers of new properties should be required to provide at least a portion of the added transportation system capacity necessitated by their development, or to make some cash contribution to the agency responsible for implementing the needed system improvements.

Establishment of an equitable fee structure would be required to assess developers based upon the level of impact to the transportation system expected from each project. Such a fee structure could be based upon the number of additional vehicle trips generated, or upon a fundamental measure such as square footage of floor space. Once the mechanism is in place, all new development would be reviewed by the local government and fees assessed accordingly.

The City of Whitefish has adopted impact fees to help fund trails, the park maintenance facility, the emergency services building, city hall, water and sewer facilities, and storm water facilities. In the future, the City may expand the use of impact fees to help fund projects identified in its Transportation Plan.

### 9.2.6 Tax Increment Financing (TIF)

Tax Increment Financing (TIF) Increment financing has been used in many municipalities in Montana to generate revenue for public improvements projects. As improvements are made within the district, and as property values increase, the incremental increases in property tax revenue are earmarked for this fund. The fund is then used for improvements within the district. Expenditures of revenue generated by this method are subject to certain spending restrictions and must be spent within the district.

According to information from the City's Growth Policy, Whitefish established an urban renewal plan and tax increment district in 1987. Since that time, the TIF district has generated over $12 million, and another $9.9 million has been raised through urban renewal bonds in 2000, 2001, and 2004. Numerous infrastructure projects have been financed by the increment directly and through urban renewal bonds including numerous street projects including reconstruction of Baker Avenue. TIF monies have also been used to help improvements and new construction of recreational facilities in the community. It is possible that TIF funds could be used to help implement some of

the identified enhancements to the US 93 corridor.

Once all bond obligations are paid, the tax increment district in Whitefish is expected to sunset in 2020.

## 9.3 Regionally Significant Projects and Fiscal Constraint

The FHWA's planning guidance indicates that before the agency can issue an environmental approval for a **regionally significant project**, the proposed project or project phase (e.g., preliminary engineering, final design, right-of-way, utility relocation, or construction) must come from an approved, **financially constrained** Statewide Transportation Improvement Plan (STIP).

**Regionally significant projects** typically include projects on a facility which serves regional transportation needs and typically includes principal arterial highways like US 93. Regionally significant projects in areas outside of Metropolitan Planning Organization (MPO) boundaries (like Whitefish) include all projects on principal arterial highways that add capacity or significantly change the facility's operational characteristics.

FHWA's July 17, 2008 guidance (found in **Appendix B**) notes the most common types of highway improvements (pavement preservation, rehabilitation, reconstruction on or parallel to the existing alignment without adding lanes, safety improvements, and intersection modifications) are not regionally significant projects. FHWA and MDT will need to review the scope of any proposed changes to US 93 and determine if the proposed improvements meet the regionally significant definition.

Fiscal constraint has been a key component of federal transportation legislation since 1991. Fiscal constraint provisions are intended to focus on available financial resources and help States prioritize decisions so those projects for which funding is reasonable expected can be advanced. The term **financially constrained** means that projects can be implemented with current or proposed revenue sources without affecting the operation and maintenance of the transportation system as a whole.

Montana routinely develops a STIP showing priority transportation projects to be undertaken during the period covered by the plan (at least 3 years). MDT's District Offices and the Project Analysis Bureau have critical roles in managing the planning process and programming funds for individual projects included on the STIP. MDT must ensure that future improvements to the US 93 corridor are duly considered in the STIP and that adequate and viable revenue sources are available to implement a reconstruction project or individual phases of such a project.

## 9.4 Future NEPA/MEPA Compliance

Advancing either configuration would first require consulting with the FHWA to

discuss the need for and scope of a re-evaluation of the Final EIS as it relates to the Whitefish Urban project area. FHWA Technical Advisory T 6640.8A addresses re-evaluations and suggests that such actions include both consultation with FHWA and a written re-evaluation to determine the validity of the Final EIS and ROD for the Whitefish Urban project area.

Re-evaluations serve to insure compliance with all applicable Federal and State laws prior to the advancement of the project to the next major phase of project development (preliminary engineering, right-of-way acquisition, or construction). The re-evaluation process also provides the mechanisms whereby the status of commitments made by MDT during the project development process are identified and updated if necessary. Any new commitments or laws which may have come into effect since the approval of the original final environmental document are addressed in the re-evaluation. As a result, the environmental documentation for the project is made current with prevailing rules and regulations and any commitments resulting from the project development process or due to permit requirements.

The re-evaluation is the only instrument available to fully document compliance with Federal laws and any changes that may have occurred on a project since the approval of the original final environmental document. The extent and complexity of the re-evaluation is contingent upon the project's status at the time the reevaluation is prepared, changes to the affected environment since the approval of the original environmental document, and the purpose of the reevaluation (e.g., design change). Re-evaluations can be simple or lengthy and complex, citing and/or containing other resource materials or relevant information from design reports. The documents typically contain a finding indicating whether or not the changes which have occurred are considered major.

The FHWA Montana Division Office would consider the information provided in the re-evaluation and make a decision regarding the need for a Supplemental EIS. If the re-evaluation demonstrates that there are significant changes in impact status or document compliance, then some type of supplemental environmental documentation may be required. In this situation, MDT will coordinate with FHWA to determine the work effort and public involvement required to allow the project to progress.

FHWA's regulations 23 CFR §771.130) indicates that a Supplemental EIS is needed when the agency determines that:

- Changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or

- New information or circumstances relevant to environmental concerns and bearings on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS.

A Supplemental EIS will not be necessary where:

- The changes to the proposed action, new information, or new circumstances result in a lessening of adverse environmental impacts evaluated in the EIS without causing other environmental impacts that are significant and were not evaluated in the EIS; or

- The FHWA decides to approve an alternative fully evaluated in an approved final EIS but not identified as the preferred alternative.

If it is determined that a Supplemental EIS is not necessary, the ROD as it relates to the Whitefish Urban project would need to be revised. FHWA's regulations addressing changes to the preferred alternative identified in the Final EIS and ROD, listed in 23 CFR 771.127(b), are shown below:

> "If the Administration subsequently wishes to approve an alternative which was not identified as the preferred alternative but was fully evaluated in the final EIS, or proposes to make substantial changes to the mitigation measures or findings discussed in the ROD, a revised ROD shall be subject to review by those Administration offices which reviewed the final EIS under §771.125(c). To the extent practicable the approved revised ROD shall be provided to all persons, organizations, and agencies that received a copy of the final EIS pursuant to §771.125(g)."

This corridor study and its supporting documents will provide considerable information that can be directly considered in a re-evaluation of the Final EIS or for a Supplemental EIS if FHWA determines such a document is necessary. It is worth noting that MDT recently re-evaluated the Final EIS as it related to the Whitefish-West project. Based on the re-evaluation, it was determined a Supplemental EIS was not needed and the Whitefish West project has advanced to the design stage.

## 9.5 Next Steps

### 9.5.1 Complete the Environmental Review Process

MDT must complete an environmental review process to document NEPA/MEPA compliance before federal and state funding can be programmed for the corridor improvements and design activities can actually begin. As noted above, re-evaluation of the Final EIS as it relates to the Whitefish Urban project area must first be completed to determine whether a Supplemental EIS is necessary. Based on the findings of the re-evaluation, FHWA and MDT would need to make a decision about the appropriate environmental review process and ultimately revise the Record of Decision for the Whitefish Urban project area based on the outcome of the process.

The work of this study, together with the Whitefish Transportation Plan, should provide much of the information and analyses needed for the environmental review process.

However, existing cultural resource surveys, wetlands delineations, or noise evaluations would likely need to be updated or supplemented as part of the environmental review process.

### 9.5.2 Determine Long-range Funding Sources for Corridor Improvements

MDT, FHWA and the City of Whitefish will need to develop a long-range funding plan for corridor improvements that fully considers the federal, state and local requirements tied to the use of these funding sources. Committing federal funding to corridor improvements will require that projects be nominated and programmed by MDT through its STIP process. This programming covers a variety of project phases.

As noted earlier in this Part, Baker Avenue north of 7th Street is a state-designated Urban Route and eligible to receive Surface Transportation Program - Urban (STPU) funds. However, Baker Avenue south of 7th Street and 13th Street between Spokane and Baker Avenues are not on the state-designated Urban Highway System and are, therefore, not eligible for STPU funds. These roadways could be added to the Urban Highway System at the request of the local government. However, such additions require MDT's review and support for the proposed change and the Montana Transportation Commission must ultimately approve the request. It should be noted that any addition to the urban system would generally require removal of mileage from the existing urban system.

MDT and the City of Whitefish would need to develop cost sharing agreements to specify which entity would be responsible for funding the amenities included with corridor improvements.

### 9.5.3 Begin Design Activities for Corridor Improvements Projects

As soon as possible after completing the environmental review process and necessary programming decisions have been made, it is recommended that design activities be initiated on corridor improvements projects based on their identified priorities. These activities would include the surveys needed for design and the development of specific scopes of work for corridor projects and the development of traffic studies to provide current traffic counts, intersection turning movement counts, projected traffic volumes, and level of service and capacity information for the relevant intersections and corridor road segment.

Coordination would need to occur to ensure that designs incorporate any necessary or planned infrastructure work by the City and to identify amenities that would be part of the improvement projects. Design activities would also identify and facilitate necessary right-of-way acquisitions within each project area.

# APPENDICES

WHITEFISH
URBAN CORRIDOR STUDY OF U.S. 93

# APPENDIX A:
# Public and Agency Involvement During the Corridor Study

# Whitefish Transportation Plan
# Urban Corridor Study of US 93
# Public Information Meeting #1 Summary (04/16/07)

## Introduction

A public open house informational meeting for the Whitefish Transportation Plan and Urban Corridor Study of US 93 projects was held on Monday, April 16, 2007 in the Whitefish City Council Chambers, 402 East Second Street. The meeting occurred between 5:00 and 7:00 p.m. and included a PowerPoint presentation beginning about 5:15 p.m.

The meeting was attended by the following agency and Consultant Team members:

| | |
|---|---|
| Karin Hilding | City of Whitefish |
| Sheila Ludlow | MDT Statewide and Urban Planning Section (Helena) |
| Shane Stack | MDT Missoula District Office (Missoula) |
| Susan Kilcrease | MDT Environmental Services (Missoula) |
| Jeff Key | Robert Peccia & Associates (RPA - Helena) |
| Dan Norderud | Robert Peccia & Associates (RPA - Helena) |

Twenty-six (26) people signed the attendance sheets for the meeting, although more than a dozen other persons joined the meeting as it progressed. A copy of the sign-in sheets from the meeting is attached.

## Meeting Purposes

The purposes of the public meeting were to:

- Introduce the Whitefish Transportation Plan and Urban Corridor Study of US 93 projects currently underway in the community.
- Introduce the project team and convey appropriate contact information.
- Present the project schedule and development parameters.
- Solicit input from the community on transportation-related issues and concerns.
- Provide an opportunity for formal and informal contact with the various responsible parties for the Whitefish Transportation Plan and Urban Corridor Study projects.

# Meeting Summary

The meeting began with the informal review of various display boards positioned around the meeting room depicting the study area for the Transportation Plan and Corridor Study and other known information about the Whitefish area road and street system. Displays provided information about functional classifications, existing traffic volumes and lane configurations, traffic signal locations, crash locations, pedestrian/bicycle facilities, and past transportation projects in the community. Another set of display boards illustrated known transportation issues related to the following: Traffic Operations, Safety, Trucks, Pedestrian/Bicycle Facilities, Parking, Land Use/Growth, Aesthetics, and the Natural and Human Environments. Each board provided a broad issue statement for each topic and a list of specific conditions or concerns relating to the issue. The display boards served as contact points for informal conversations between the public and members of the Consultant Team.

Jeff Key of Robert Peccia & Associates (RPA) began the meeting at 5:15 p.m. and introduced representatives of the City of Whitefish, MDT and Consultant Team members. He then asked those in attendance to introduce themselves before beginning his formal presentation about the Transportation Plan and Urban Corridor Study projects.

**Meeting Presentation:** Mr. Key used a PowerPoint presentation to provide an overview of the Transportation Plan and Urban Corridor Study projects. He presented background information about each project, summarized major work tasks and milestones for the projects, and outlined planned public outreach activities. Additionally, the slides identified the study area boundary for the Transportation Plan (the same area considered in the community's Growth Policy) and listed elements that will be emphasized in the plan.

Mr. Key noted that while several transportation studies have been completed for specific areas, no comprehensive Transportation Plan has ever been completed for the City of Whitefish and its surrounding area. He stressed that the Urban Corridor Study will be developed within the context of and concurrent with the Whitefish Transportation Plan. This approach allows for a focused look at US 93 through Whitefish based on the consideration of existing and planned land use changes and a detailed evaluation of community-wide transportation needs and desires. The corridor study will allow for a "fresh look" at issues associated with US Highway 93 through Whitefish and offers the opportunity to examine a full range of design options for the facility.

Mr. Key emphasized that these new planning efforts will be sensitive to prior community input and projects like: previous "subarea" transportation studies; the US Highway 93–Somers to Whitefish Final Environmental Impact Statement (FEIS); the Downtown Business District Master Plan; and the community's current Growth Policy Update project. He emphasized the value of previous efforts by the Citizens Working Group (CWG)—a group previously established to provide design input for the "Whitefish Urban" and "Whitefish-West" projects under development by the Montana Department of Transportation (MDT). Mr. Key indicated the Consultant Team's intention was to acknowledge past work and build upon known transportation issues and concerns in the Whitefish area.

**Breakout Sessions:** The presentation lasted about 35 minutes and was followed by a "breakout" session where those in attendance were encouraged to visit one of three stations to discuss issues with the Consultant Team related to: US 93 urban corridor, general transportation issues, and pedestrian/bicycle and transit issues. The breakout stations were manned by Mr. Key (General Transportation Issues), Dan Norderud (US 93 Urban Corridor) of RPA and Karin Hilding of the City of Whitefish (Pedestrians/Bicycles and Transit). The breakout sessions lasted about 30 minutes and key comments identified through discussions were documented at each station. Comments noted during the breakout sessions are summarized below:

**General Transportation Issues**

- The 2nd Street Bridge over the Whitefish River has a very poor riding surface and the concrete is falling apart. This is a maintenance issue and should be addressed?
- There is a substantial seasonal variation in traffic volumes within the Whitefish area. The summer tourist season is generally the peak traffic condition, although during school year some of the intersections next to the school become quite congested.
- A potential bypass of the community will be met with resistance. It would make sense to remove big trucks from the downtown, but people living along existing roadways/corridors will resist. You will almost have to find a totally brand new corridor if a Bypass will; be seriously considered.
- Whitefish Stage Road has safety issues related to speed and no roadway expansion should be completed. People ride their bikes and walk along the roadway which compromises safety even further. There are three safety projects that will be completed to address curve and sight distance issues however.

**Pedestrians/Bicycles and Transit**

- The City's Bicycle/Pedestrian Master Plan needs to be made a part of this community-wide transportation plan.
- Bicycle and pedestrian facilities are critical elements of future improvements to the US 93 corridor through Whitefish and past Twin Bridges Road.

**US 93 Urban Corridor**

- The highway corridor should be all commercial.
- Consideration should be given to a bypass that would draw truck traffic away from the corridor. (Truck bypass possibilities along Farm-to Market Road and an existing powerline corridor were mentioned).
- How will the corridor study interface with the recommendations in the Downtown Business District Master Plan?
- What is the timeframe for actually reconstructing US 93 through Whitefish?
- Reconstructing US 93 through Whitefish could result in the loss of on-street parking. On-street parking is critical to local businesses.

The comments and issues heard at each station were then relayed to the entire group.

**Public Comments/Questions:** Following the breakout session, Mr. Key opened up the meeting for comments and general questions from the audience. The following comments or questions were heard during this part of the meeting:

- **What is the definition of urban?** It was explained that incorporated areas in Montana are considered "urban" when they have a population of 5,000 or more. Montana has 15 designated urban areas and three communities with over 50,000 residents that fall under Metropolitan Planning Organization (MPO) guidelines for transportation planning.

- **When will the next public meeting occur?** Mr. Key explained that according to the schedule, the next series of meetings should occur near the end of May or in early June. Members of the audience suggested that August would be a poor time for a public meeting since many residents are not around during the month.

- **Will the Consultant Team present more information at the next meeting?** Mr. Key indicated that considerable information regarding the operation of the transportation system is known and new information will be generated over the upcoming months due to the aggressive schedule of the projects. This information will be summarized at the next public meeting.

- **How will cost constraints be considered in the transportation plan? Can a realistic plan be developed without consideration of costs and affordability?** Mr. Key explained that MPO's (large urban areas in Montana) develop transportation plans that are fiscally constrained—i.e. projects identified in the transportation plan have firm costs and designated funding sources. He continued that most transportation plans for smaller urban areas are not fiscally constrained and identify projects that will benefit the community regardless of their cost. However, projects within transportation plans are often prioritized by local officials and a variety of funding sources can be pursued for individual projects.

- **What is the timeframe for actually reconstructing US 93 through Whitefish**? The reconstruction of US 93 will not occur until after the corridor study is completed and the recommendations from the study are duly considered and documented through the appropriate National Environmental Policy Act (NEPA) process.

  Because the Whitefish Urban project was developed as the result of an Environmental Impact Study (EIS), the recommended design option(s) must be reviewed by Federal Highway Administration (FHWA) and MDT to determine how they relate to the decisions in the EIS and how to proceed. It is possible that a Supplemental EIS may be needed if design option(s) or potential impacts are substantially different than those in the original EIS. A decision regarding a preferred alternative for US 93 from by FHWA and MDT will be needed before a construction project can be developed and programmed for funding. It may take 3- to 5 years before a reconstruction project on US 93 will be ready for programming by MDT. The actual construction will then depend on the availability of funding.

**Conclusion:** Mr. Key concluded the meeting by quickly summarizing upcoming activities for the projects and thanking those in attendance for their input.

**The meeting concluded at about 6:45 p.m.**

It is also noted that an abbreviated version of the *powerpoint* presentation was made to the Whitefish City Council at their regularly scheduled meeting the evening of April 16th. Although the meeting began at 7:10 pm, RPA did not make their presentation until 10:15 pm due to a wide variety of regular business being conducted at the evening's City Council meeting. RPA's presentation lasted about ten (10) minutes and gave the Council a summary of the two projects at hand and a brief assessment of the previous public meeting held earlier in the evening.

# WHITEFISH

**TRANSPORTATION PLAN**
**URBAN CORRIDOR STUDY OF U.S. 93**

## SIGN IN SHEET

**PUBLIC MEETING NO. 1**
**April 16th, 2007**

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|---|---|---|---|
| JEFF Key | 825 Custer Ave. | Helena | jeffk@rsg-hln.com |
| DAN Nordquist | 825 Custer Ave. | Helena | dan@rsg-hln.com |
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| Susan Kilcrease | 2100 W. Broadway | Missoula | skilcrease@mt.gov |
| GEORGE S. GARDNER | 2339 NORDIC LOOP | WHITEFISH | |
| STEVE PLEASANTS | 533 SPOKANE AVE W | WHITEFISH | DRPCHIRO@CENTURYTEL.NET |
| John Chaney | 609 Baker | Whitefish | jchaney@esus6.edu |
| Gary Stephens | 1470 Berkley Lane | " | gary stephens@centurytel.net |
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SHEET 1 of __

# WHITEFISH

**TRANSPORTATION PLAN**
**URBAN CORRIDOR STUDY OF U.S. 93**

## SIGN IN SHEET

**PUBLIC MEETING NO. 1**
**April 16th, 2007**

| NAME | ADDRESS / P.O. Box | City | Email Address |
|---|---|---|---|
| Don Stuney | P.O. Box 698 | Whitefish | DKSjec@digisys.net |
| Marvin Parker | 110 Fairway Drive | Whitefish | |
| Dave Kauffman | Bx 91 | Whitefish | |
| Nancy Svennungsen | 310 Glenwood Rd | Whitefish | svenna@bresnan.net |
| Mark Svennungsen | | | |
| Ed Brack | 110 GOAT TRAIL | WHITEFISH | |
| Mary Jo Brack | 290 Fairway Dr | Whitefish | |
| Bob Blueberry | 550 Grouse Ridge Drive | Whitefish | |
| Shannon Nasby | 1845 Hwy 93 S. 240 | Whitefish | |
| Julie Perchal | 390 Missy Lane | Whitefish | snowperch@centurytel.net |

SHEET ___ of ___

WHITEFISH
TRANSPORTATION PLAN
URBAN CORRIDOR STUDY OF U.S. 93

# SIGN IN SHEET

PUBLIC MEETING NO. 1
April 16th, 2007

| NAME | ADDRESS / P.O. Box | City | Email Address |
|---|---|---|---|
| Chris Sonnenzo M | 501 Spruce Avenue | Whitefish | gardenl@digsys.net |
| RHONDA FITZGERALD | 412 WPARK | WPARK | |
| Jennifer Gans Newman | PO 856 | Whitefish | dnegans@yahoo.com |
| Sheila Bowers | 530 E 2nd St | Whitefish | sbrowers@whitefishchamber.org |
| | | | |
| Shane Stack | | | |
| Karin Hilding | | | |
| | | | |
| | | | |

SHEET ___ of ___

# Whitefish Transportation Plan
# Urban Corridor Study of US 93
# Public Information Meeting #2 Summary (07/17/07)

## Introduction

The second public open house informational meeting for the Whitefish Transportation Plan and Urban Corridor Study of US 93 projects was held on Tuesday, July 17, 2007 in the Whitefish City Council Chambers, 402 East Second Street. The meeting occurred between 6:00 and 8:00 p.m. and included a PowerPoint presentation beginning about 6:15 p.m.

The meeting was attended by the following agency and Consultant Team members:

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|---|---|
| John Wilson | City of Whitefish |
| Sheila Ludlow | MDT Statewide and Urban Planning Section (Helena) |
| Jean Riley | MDT Statewide and Urban Planning Section (Helena) |
| Jeff Key | Robert Peccia & Associates (RPA - Helena) |
| Dan Norderud | Robert Peccia & Associates (RPA - Helena) |
| Scott Randall | Robert Peccia & Associates (RPA - Helena) |

Seven (7) members of the public attended the meeting including Nancy Woodruff, a member of the Whitefish City Council. A copy of the sign-in sheet from the meeting is attached; however, not all signed the attendance sheets for the meeting since some joined the meeting as it progressed.

## Meeting Purposes

The purposes of the public informational meeting were to:

- Describe work completed to date and review project scope and schedule;
- Discuss the land use assignments made for the planning horizon (year 2030) and how it influences transportation decisions;
- Present preliminary "future year" traffic volumes on the study area road system;
- Describe cursory findings of western route alternatives;
- Provide for open discussion on transportation issues in the Whitefish City Beach area and school areas; and
- Solicit input on the potential for expanding transit service in Whitefish and for an additional railroad crossing in the community.

# Meeting Summary

Jeff Key of Robert Peccia & Associates (RPA) began the meeting at 6:15 p.m. and introduced representatives of the City of Whitefish, MDT and Consultant Team members. He then began a PowerPoint presentation focused on the Transportation Plan project.

Mr. Key summarized major work tasks and milestones for the Whitefish Transportation Plan and Urban Corridor Study projects, and outlined planned public outreach activities. He presented a project schedule that showed completion of the Transportation Plan and Corridor Study documents before the end of 2007.

Mr. Key provided an update of work progress to date for the Transportation Plan and indicated data collection activities began last spring and are ongoing. Some intersections were counted in May and numerous other locations will be counted during July and August to reflect peak seasonal traffic in the community. Average Daily Traffic (ADT) volumes have been collected for major roadways in the Transportation Plan study area and accident data has been analyzed to help identify crash locations. Further, he stated future land use and employment projections have been made and incorporated into the "travel demand model" for the Whitefish area and preliminary model results have been obtained from MDT. Public outreach activities have continued.

He stressed that work for the Whitefish Transportation Plan is taking priority over that for the Urban Corridor Study at this time. Defining overall transportation system needs and desires, recognizing future land use changes, and the travel demand modeling done for the Transportation Plan will provide important information needed to take a focused look at US 93 through Whitefish.

**Existing Conditions Summary:** Mr. Key presented a series of slides showing existing traffic volumes on major roadways, existing levels of service at key intersections, and crash locations within the study area. He stated the level of service analysis for intersections has not yet been completed due to ongoing data collection at numerous locations.

**Land Use Forecasting:** Mr. Key then discussed land use forecasting and its importance to the travel demand model. He stated that land use forecasting including the allocation of future dwelling units and the locations of non-retail and retail jobs is crucial to assessing transportation system needs in the future (year 2030 for the Transportation Plan). The projections are based on information from the US Census Bureau and local planning documents like the City's *Growth Policy Update*, and Downtown Business District Master Plan. He stressed that the Whitefish community is growing and will continue to grow with an increasing impact on traffic volumes.

Mr. Key indicated that projected future dwelling units and jobs are allocated to individual Census Blocks within the study area. The travel demand model used by MDT is sensitive to this information and can reliably predict travel patterns based on the location of dwelling units and jobs. He then presented a series of slides that showed how dwelling units and jobs have been allocated to each Census Block in the study area. He emphasized that projections through the year 2017 are consistent with the City's Draft Growth Policy and other planning documents. Growth rates after the year

2017 were assumed to remain similar to that recognized in the Growth Policy (3.6% per year). Mr. Key pointed out that this may or may not occur, but the growth rate is a reasonable assumption for the future.

**Preliminary Future Traffic Volumes (2030):** Mr. Key then showed several slides illustrating year 2030 projected traffic volumes on Whitefish area roadways. The traffic volumes were generated by MDT's travel demand model and reflect future volumes without any improvements to the road system. He stated that comparing future year traffic volumes against the capacities of roadway types in the community helps identify potential problems and roadway needs. Mr. Key selected several Whitefish roadways and presented existing versus future traffic volumes to illustrate notable changes.

**Western Route Alternatives:** Mr. Key moved onto a series of slides depicting western route connections between US 93 south and US 93 west of Whitefish. He indicated that work directives for the Transportation Plan require RPA to identify and evaluate potential new western routes that might help alleviate traffic on US 93 through the City. He explained that RPA revisited four potential western alignments considered in the Somers-Whitefish Final EIS. The western route alternatives were modeled to determine potential future traffic volumes on each alignment and their impacts on US 93 and parts of the local road system. Model runs were completed both with and without alternate routes in place to determine their potential to reduce traffic on US 93. The preliminary modeling showed alternate routes would attract a notable amount of traffic (typically 7,000-15,000 vehicles in 2030); however, significant traffic volumes would likely continue on the existing US 93 corridor.

John Wilson pointed out the importance of considering and planning for new connections on Whitefish's east side. He felt such routes could help meet long term needs, link schools with the JP Road area, and provide important connections in the Haskill Basin area.

**Developing Issues/Open Forum:** Jeff Key identified several emerging topics that will need to be considered in the Transportation Plan. These items are discussed below

- City Beach Area. Mr. Key showed an aerial photograph of the City Beach area and described existing traffic circulation and parking conditions and highlighted issues associated with pedestrian transportation in the area. He asked the audience for comments regarding improving traffic flows and pedestrian safety.

  A member of the audience pointed out that parking for vehicles with boats is limited in the area and that vehicles must negotiate steep roadway sections. John Wilson stated the City's big motivation for looking at this area was to improve safety for pedestrians, bicyclists, skateboarders, and others. He felt there is a need to enhance trail connections from northeastern portions of Whitefish to City Beach.

- School Area Circulation Improvements. Mr. Key shared that RPA had reviewed conditions surrounding Whitefish High School and nearby Muldown Elementary School during May

when school was in session. He listed several circulation and safety problems experienced in this area and described a proposal he was aware of to extend a portion of 8th Street to Ashar Avenue. John Wilson indicated the 8th Street extension has been considered in the past by the City Council. He was not certain the extension would provide many benefits in the area.

- Transit System Considerations. Mr. Key described a meeting held with staff from Glacier National Park (GNP) regarding partnering with communities surrounding the park and making use of GNP transit vehicles during the park's off-season. He also asked the audience about how transit travel modes can be integrated into future transportation planning in the Whitefish area. Those in attendance generally felt that expanding transit services would be desirable; however, acknowledged conditions that contribute to low ridership levels.

- Additional Railroad Grade Separation. Mr. Key asked the group for ideas on where a new grade separation over the BNSF Railroad might be desirable. He pointed out that there is an existing at-grade crossing east of town on 2nd Street but enhancing the crossing is unlikely. He offered several potential locations for a new grade separation such as Columbia Avenue, East Texas Avenue/Pine Avenue, and in the Cow Coulee area. Those attending generally agreed that a new crossing was desirable and should be included in the Transportation Plan.

  John Wilson commented that another railroad overcrossing has been viewed as desirable for many years and locations like those discussed had been mentioned before. He also noted a structure may be hard to justify given its high construction costs and limited funding sources.

  A member of the audience asked about the possibility of an undercrossing instead of an overcrossing. John Wilson responded by stating high groundwater in the Whitefish area poses concerns for constructing an undercrossing. Jeff also said ensuring uninterrupted rail traffic could also add to the cost of an undercrossing.

**Conclusion:** Mr. Key concluded his presentation by summarizing upcoming work efforts. These efforts will focus on developing appropriate long-range recommendations for roadways, intersections, non-motorized infrastructure and transit. The recommended transportation network improvements will be modeled and future model volumes will be used to evaluate design options for US 93 corridor through the City. Design options for US 93 will be developed to maintain efficient traffic flows, address safety for all users, preserve the character of the downtown area and community in general, and ensure compatibility with the Downtown Master Plan and Growth Policy Update.

**Public Comments/Questions:** The following public comments or questions were heard during the meeting:

- **Has anyone ever looked at the possibility of developing Farm to Market Road from Kalispell to Whitefish as an alternate to US 93?** Mr. Key explained that while Farm to Market Road offers an opportunity for developing a parallel route to US 93, the corridor is

located to far from Whitefish and would not reduce traffic on US 93 through the City.

- **When will the next public meeting occur?** Mr. Key explained that the next series of meetings should occur near the end of September or in early October. Members of the audience suggested ensuring an article about the Transportation Plan and the third public meeting appears in the Whitefish Pilot.

**The meeting concluded at about 7:30 p.m.**

WHITEFISH
TRANSPORTATION PLAN
URBAN CORRIDOR STUDY OF U.S. 93

# SIGN IN SHEET

PUBLIC MEETING NO. 2
July 17th, 2007

| NAME | ADDRESS / P.O. Box | City | Email Address |
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| Claudia Knudsen | 2635 U.S. Hwy 93 N Whitefish, MT | Whitefish | dougknu@msn.com |
| REBECCA NORTON | P.O. BOX 762 | WF | rannenorton@yahoo.com |
| Sheila Boxer | Whitefish Chamber | " | |
| Sheila Ludlow | MDT | HELENA | sludlow@mt.gov |
| Dan & Judy Spivey | PO Box 878, 59937 | Whitefish | drsjes@digisys.net |
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# Whitefish Transportation Plan
# Urban Corridor Study of US 93
# Public Information Meeting #3 Summary (01/10/08)

## Introduction

The third public open house informational meeting for the Whitefish Transportation Plan and Urban Corridor Study of US 93 projects was held on Thursday, January 10, 2008 in the O'Shaughnessy Center, 1 Central Avenue. The meeting took place between 7:00 and 9:15 p.m. and included a PowerPoint presentation beginning about 7:15 p.m.

The meeting was attended by the following agency and Consultant Team members:

| | |
|---|---|
| John Wilson | City of Whitefish |
| Karin Hilding | City of Whitefish |
| Sheila Ludlow | MDT Statewide and Urban Planning Section (Helena) |
| Jeff Key | Robert Peccia & Associates (RPA - Helena) |
| Dan Norderud | Robert Peccia & Associates (RPA - Helena) |

More than 80 people attended the meeting; however, not all signed the attendance sheets for the meeting since some joined as it progressed. Copies of the sign-in sheets from the meeting (attached) show that 50 people signed the attendance sheets.

Prior to the meeting, the entries from the City's Transportation Plan Kids Art Contest were available for viewing in the foyer of the O'Shaughnessy Center. Informal conversations with attendees occurred prior to and after the public meeting.

Copies of the Executive Summary and a figure showing recommended major street network improvements from the draft Transportation Plan were used as handouts for the meeting.

## Meeting Purpose

The primary purpose of this meeting was to present the first "Public Draft" of the Whitefish Transportation Plan document and highlight its major components to the public. The purposes of the informational meeting were to:

- Discuss how a community Transportation Plan is intended to be used and what value it brings to the process;
- Highlight key chapters in the Transportation Plan;
- Describe the process for public review of the document and how to submit written comments; and
- Provide an open forum for questions from the public and answers from the Consultant.

# Meeting Summary

Karin Hilding of the City of Whitefish began the meeting by welcoming the public and announcing the winners of the Whitefish Transportation Plan Kids Art Contest. The contest was held to solicit visions about what transportation in Whitefish might be like in the year 2030. She then introduced Jeff Key of Robert Peccia & Associates (RPA), the engineering firm hired by the City and the Montana Department of Transportation (MDT) to prepare the Whitefish Transportation Plan.

Mr. Key began his presentation around 7:15 p.m. by introducing representatives of the City of Whitefish, MDT and the Consultant Team. He then began a PowerPoint presentation discussing the Transportation Plan document. Jeff began by advising the audience that the draft Transportation Plan is the "first cut" at a community-wide Transportation Plan and represents only the Consultant's opinions at this time. He stressed that the Transportation Plan has not yet been adopted or endorsed by the City of Whitefish or the MDT. He commented that the Plan is intended to help guide major transportation system decisions in a community and should be used by elected officials, staff, planners, developers and the public. Since conditions can sometimes change quickly, the Plan needs to be regularly updated to reflect changes in the community and revisit planning assumptions.

He pointed out that the Transportation Plan is intended to be in general compliance with other planning documents in the community. Mr. Key reiterated transportation-related goals outlined in the community's recently adopted Growth Policy and indicated the recommendations contained in the Transportation Plan are generally consistent with these goals.

Mr. Key advised the audience that a companion project—the US 93 Urban Corridor Study—is underway and involves a detailed analysis of conditions on Spokane Avenue, 2nd Street, and Baker Avenue. The Corridor Study should be completed several months after the Transportation Plan since defining overall transportation system needs and desires, recognizing future land use changes, and the travel demand modeling done for the Plan will provide important information for the Corridor Study.

**Summary of the Draft Transportation Plan:** Mr. Key then presented a series of slides highlighting several key chapters from the Draft Transportation Plan including:

- **Chapter 1 – Introduction & Background**
- **Chapter 3 – Travel Demand Forecasting**
- **Chapter 6 – School Transportation Considerations**
- **Chapter 8 – Recommended Projects**
- **Chapter 9 – Miscellaneous Transportation System Considerations**

Chapter 1 – Introduction & Background: Mr. Key commented that this chapter summarizes the history, need and value of transportation planning in the community. It presents the "transportation related goals, policies and objectives" currently in place in your community that are elaborated in a variety of planning documents including the Whitefish Growth Policy, Downtown Business District Master Plan, Big Mountain Neighborhood Plan, and others. He stressed that knowing the community's goals and objectives are crucial in determining whether the Transportation Plan and its recommendations are "on target."

Chapter 3 – Travel Demand Forecasting: Mr. Key indicated that a crucial step in assessing future (year 2030) transportation system needs was the development of a travel demand model for the Whitefish study area. The travel demand model used by MDT is sensitive and can reliably predict travel patterns based on the location of dwelling units and retail and non-retail jobs. He explained that projected future dwelling units and jobs were allocated to individual Census Blocks within the study area consistent with US Census Bureau projections and assumptions in the Whitefish Growth Policy. He then presented several slides showing how future dwelling units and jobs have been allocated within the study area to each Census Block in the study area. The land use and employment projections suggest that growth will continue in the Whitefish area.

Mr. Key pointed out that the travel demand model developed for the Plan provides a way to estimate future traffic volumes and identify potential roadway needs. He stressed that the traffic volumes generated by the model are not absolutes but allow for a planning level comparison of existing to future conditions.

He then showed several slides illustrating year 2030 projected traffic volumes on Whitefish area roadways. The traffic volumes were generated by MDT's travel demand model and reflect future volumes without any improvements to the road system. He stated that comparing future year traffic volumes against the capacities of roadway types in the community helps identify potential problems and roadway needs.

Mr. Key stressed that without improvements, the traffic generated by this growth will likely continue to place substantial demands on the existing transportation system.

Chapter 6 – School Transportation Considerations: Mr. Key said that along with peak tourism traffic, school traffic issues notably affect traffic flow in Whitefish. He related that this chapter of the Plan discusses a variety of issues experienced at or near schools and presents potential remedies or ideas to address the issues. He noted that the Plan includes considerable discussion about the Safe Routes to School (SRTS) program and its potential benefits.

Chapter 8 – Recommended Projects: Mr. Key then showed a series of slides discussing recommendations for transportation improvements. He pointed out that Chapter 8 of the Plan attempts is to provide a range of projects that will enhance the local transportation system. He stated that a fundamental philosophy of the Plan is to focus on creating a strong grid transportation network by increasing east-west and north-south connections. He advised the audience that recommendations show a variety of new corridors that may be desirable if and when development occurs in such areas. He emphasized that all projects recommended in the Plan are an attempt to strengthen the existing transportation system, prepare for the future, increase travel mobility and provide options.

He indicated that the recommended improvements include relatively low cost Transportation System Management (TSM) projects like adding turn bays and making simple improvements at intersections, installing or modifying traffic signals, and doing access control studies. Mr. Key also stated that recommendations include large-scale projects—identified as Major Street Network (MSN) projects—involving roadway reconstruction, new roadway corridors, or other major undertakings. Jeff presented slides showing where MSN projects are proposed within the study area

and highlighted recommended improvements in the Whitefish Beach area.

He pointed out that there are a variety of projects previously identified in the City's Capital Improvements Plan and in the City's Pedestrian and Bicyclist Master Plan that are being carried forward in the Transportation Plan.

Chapter 9 – Miscellaneous Transportation System Considerations: Mr. Key briefly highlighted the content of Chapter 9. He stated that many of the items discussed in the chapter don't really fit into other chapters of the Plan and several topics help "plant the seed" for ideas that may be valid during the planning period. He highlighted the potential for a cooperative transit project between Glacier National Park and gateway communities near the park.

Western Route Alternatives: Mr. Key moved onto a series of slides depicting western route connections between US 93 south and US 93 west of Whitefish. He indicated that work directives for the Transportation Plan required RPA to identify and evaluate potential new western routes that might help alleviate traffic on US 93 through the City. He explained that RPA revisited four potential western alignments considered in the Somers-Whitefish Final EIS. The western route alternatives were modeled to determine potential future traffic volumes on each alignment and their impacts on US 93 and parts of the local road system. Model runs were completed both with and without alternate routes in place to determine their potential to reduce traffic on US 93.

Mr. Key indicated that the Transportation Plan does not recommend a "bypass" route around Whitefish. Although travel demand modeling suggests such a route would draw some traffic, a western route would not solve future traffic issues along the US 93 corridor through Whitefish. He pointed out that the western routes around Whitefish have numerous issues that would likely make such projects difficult to implement including environmental resource constraints, landowner opposition, and high construction and right-of-way costs. For these reasons, the Consultant believes the community is better served by strengthening the transportation grid system and focusing on other improvements.

**Commenting on the Draft Transportation Plan:** Mr. Key advised the audience about locations in Whitefish and on line where the Transportation Plan can be read and reviewed. He encouraged the public and other interested parties to submit written comments on the Plan by January 31, 2008.

**Next Steps:** Mr. Key concluded his presentation by stating that it is up to the City-County Planning Board and City Council to adopt the Transportation Plan. He stated that additional opportunities to receive public comments on the Plan will occur at Planning Board meetings on January 17 and February 21 and at a future City Council hearing on the Transportation Plan (possibly during March). He then requested comments or questions from the audience.

## Public Comments/Questions

The following public comments or questions were heard during the January 10 public meeting:

- **What is meant by a "parallel connector" and what is its purpose?** Mr. Key explained that a parallel connector is an alternate route that parallels an arterial roadway (like Spokane

Avenue). Jeff took the opportunity to provide information to the audience on functional classifications of roadways and the range of traffic volumes generally associated with each classification. However, it should be recognized that *federal functional classification doesn't correlate volumes to classifications.*

- **A bypass route has been advocated for a long time in Whitefish. Would the need for a bypass be offset if Spokane and Baker Avenues were configured as one-ways?** As indicated during the presentation, modeling done for the Transportation Plan suggests that future traffic volumes would still be significant even with a bypass in place. Mr. Key explained that the Corridor Study is taking a detailed look at a variety of potential configurations for Spokane and Baker Avenues. The work done for the Corridor Study will help establish the most desirable and effective long-term configuration for US 93.

- **The presence of large trucks in the downtown is undesirable and should be addressed now. Continuing the existing situation over the planning horizon is unacceptable.** Comment is noted.

- **Is there sufficient existing right-of-way along Wisconsin and Karrow Avenues to accommodate the recommended upgrades suggested in the Transportation Plan?** Mr. Key explained that he did not know for sure if existing rights-of-way would be sufficient to adequately improve these corridors. He noted that Wisconsin Avenue has a particularly narrow right-of-way. He also noted that the costs of right-of-way acquisition will be sizable for some projects but it may be possible to make some interim improvements without new right-of-way in some areas.

- **All major roads in Whitefish feed into the downtown area. If development continues in the center of the community, the need for a bypass will be greater.** Jeff commented that continuing development will point toward future revisions of the Transportation Plan and growth assumptions.

- **If Karrow Avenue is improved, won't it function as a "defacto" bypass?** Jeff acknowledged that if Karrow were improved, some people would undoubtedly find and use the roadway as an alternate route to US 93. The recommendations for Karrow Avenue contained in the Plan call for "context sensitive" reconstruction as the area becomes more developed. The roadway can be designed in a manner that would help influence the type of vehicles that can use the roadway and travel speeds.

- **I applaud you for putting recommendations forth in the Transportation Plan that can be commented on by the community.** One of the original reasons that a bypass was suggested years ago was the potential for a major impact on the downtown. With the downturn in logging presently underway, maybe logging trucks won't represent such a concern in the future.

- **Karrow is quite busy on the section between 7th and US 93.** Comment is noted.

- **South of 7th to US 93 (south of Whitefish) receives light vehicle traffic. This area**

**would be difficult and expensive to improve due to the presence of wetlands and the need for three or more residential relocations (these properties exist nearly adjacent to the existing roadway). Several large property owners along Karrow Avenue have no desire to sell property or develop. There is not a very desirable location to join US 93 south of town due to the rolling terrain.** Comment is noted.

Jeff asked if the audience saw the need for some improvements to Karrow Avenue. The general sentiment was that if development occurs, then it should be improved by the developers.

- **Can you provide information about the type of non-motorized improvements being proposed in the Plan?** Jeff stated that the Plan generally incorporates the recommendations and identified projects listed in the City's Pedestrian and Bicyclist Master Plan.

- **Baker and US 93 (2nd Street) poses a huge bottleneck due to the lack of a left turn lane. Adding such a feature could provide substantial traffic relief in the area.** Comment is noted.

- **Are there any short-term plans for addressing major issues like the congestion experienced at Baker and 2nd Street?** Jeff noted that the Plan does recommend various interim measures like adding left turn bays on 2nd Street or changing signal timings. He noted that such improvements may result in the loss of some on-street parking near the intersection and that there are right-of-way limitations on one corner of the intersection. He also indicated that various interim improvements have been recommended on the Wisconsin Avenue corridor.

- **Improving the south to north left turn movement at Baker and 2nd should be a high priority.** There is more room on the south side of the intersection than on the northside.

- **Is there any plan for removing police cars that routinely park along Baker Avenue?** John Wilson indicated that the City has started the process for developing a new emergency services center and a new building is still more than a year away from happening.

- **Is the Wisconsin Avenue bike path ever going to get built?** Jeff indicated that the bike path project had to be rebid due to high costs and few bidders last year. He noted that the project has been awarded and construction will begin this spring.

- **The proposed improvements to Old Morris Trail may not be viable as recommended due to the existence of a conservation easement on some property in the area.** Comment is noted.

- **A member of the audience suggested prioritizing those feasible measures that can help ease congestion in downtown Whitefish.** Comment is noted.

- **What kind of suggestions are in the Plan for public transportation?** Jeff stated that

public transportation is discussed in Chapter 9 and includes an idea for partnering with Glacier National Park to provide transit services in nearby communities like Whitefish. Glacier National Park will have a fleet of busses that won't be used year round so there may be an opportunity to use these vehicles for part of the year. He also mentioned some opportunities to develop transit services around special events in Whitefish like the 4th of July. Eagle Transit is exploring twice per day bus service between Whitefish and Kalispell.

Jeff commented that the Plan recommends planning for future transit (like bus pullouts) when new developments are being considered. The community could also consider establishing a bike rental program to enhance alternate transportation in the community.

- **Does the Plan contain any language about bus transportation from Whitefish to Kalispell?** Eagle Transit is exploring such service between Whitefish and Kalispell.

- **What about another railroad overpass? There is a need for such a facility due to enhance emergency response times within the community.** Proposed MSN-6 (Kalner Lane Extension) includes a new grade-separated crossing of the railroad. This location was chosen over several others because it crosses only a few railroad lines and other potential crossing locations would either have negative effects on residential neighborhoods or be too far out of town to provide much benefit.

- **How do you connect Kalner Lane to Highway 40 without creating another problem intersection?** The intersection of Kalner Lane and Highway 40 would require design modifications and reconfiguration to ensure it functions well for all traffic movements. This intersection would likely meet one of the eight required signal warrants and the installation of a signal or roundabout would accommodate traffic turning left or right from Kalner Lane.

- **When making the proposed east-west connection between 13th Street and Voerman Road (MSN-10), what types of difficulties do you envision?** This connection would require the construction of a new bridge across the Whitefish River. Acquiring right-of-way and constructing a bridge would be expensive. Road and bridge construction also have the potential to impact wetlands and the riparian habitat.

- **Twenty years ago the general feeling in many communities (including Whitefish) was that a bypass could kill a small town. Now the situation has changed in Whitefish so that if we don't get a bypass it will harm the downtown. Before the idea of a bypass is dropped, it is essential that folks recognize that through traffic from Canada and other growth areas north of Whitefish will continue to create traffic impacts in Whitefish.** Comment is noted.

- **I appreciate that the Transportation Plan does not support a bypass. Traffic from logging and chip trucks is slowing.** Comment is noted.

- **Wildlife populations need to be considered when planning for transportation since conflicts between wildlife and traffic can occur.** Comment is noted. Jeff pointed out that current highway designs often contain accommodations for wildlife like over or under

crossings and ensuring fish passage in culverts.

- **Has anyone investigated Farm-to-Market Road as a truck bypass?** Jeff stated that Farm-to-Market Road is generally too far west of Whitefish to have much of an effect on traffic flows in town. Such routes need to be convenient to be attractive alternatives to existing routes.

- **If a bypass route is considered, it must connect to Highway 40 since trucks are often headed for destinations to the east and already use that highway.** Comment is noted.

- **How much would a bypass cost?** Very preliminary cost estimates were prepared for the four western route alternatives evaluated in the Transportation Plan. These options had potential construction costs ranging from $4 to $10 million which could be low given the cost of land for right-of-way in the Flathead Valley. There are also considerable costs for preliminary design engineering activities that would be incurred, typically about 10-15% of the construction cost.

- **What is the process from this point forward and how do projects recommended in the Plan get implemented?** Jeff responded that the draft Transportation Plan will be reviewed at a Planning Board work session on January 17 and at a public hearing held by the Planning Board in February. The City Council will also conduct a public hearing on the Transportation Plan and will be asked to formally adopt the Plan.

  Implementing individual projects will require decisions from MDT, the City and the County depending upon the road system (state-maintained or local systems) affected by the projects. Projects under the jurisdiction of MDT would be subject to their project development procedures and activities. Major projects under the jurisdiction of the City would be advanced through the City's Capital Improvements Program and budgeting processes. Public review and comment opportunities for individual projects would typically be available as projects are being developed by both MDT and the City.

- **The figure showing recommended improvements (Figure 8-1) shows various lines going across lands where no roads exist. Would these lines affect the sale of property? Are these lines "set in stone"?** Jeff stated that the lines represent potentially desirable transportation links for the community's transportation network. However, if there is no development planned for a property crossed by one of the "lines" then nothing is likely to happen. John Wilson also commented that the City would not be involved in the sale of property where a new road was proposed. They would only be involved when a plan to develop the property came up for consideration by the City. In that case, the City would refer to the Transportation Plan recommendations and request that the developer provide right-of-way or at least plan for a future roadway.

- ***(Written Comment from Scott Sorenson left at the meeting)*** **As a four-term (I was just appointed to my fifth term) Whitefish City-County Planning Board member, I think the two biggest needed major projects are 1) Wisconsin Avenue from the viaduct to Whitefish Mountain Resort Road and 2) a car/truck 93 bypass on the west**

**side of town. Both have been needed for years. Everything else is <u>less</u> needed.**
Comments are noted.

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# Whitefish Transportation Plan
# 2008
# Public Meeting

***When: January 10, 2008 7-9pm**

***Where: O'Shaughnessy Center**

***Formal Presentation Begins at 7:15pm with Open House to follow**

***Winners of the Whitefish Transportation Plan Kids Art Contest Will be Announced at 7pm**

***Refreshments will be provided**

The city of Whitefish, the Montana Department of Transportation (MDT) and Robert Peccia & Associates (RPA) will be holding a public meeting to present the draft ***Whitefish Transportation Plan***. The Plan contains important recommendations to strengthen the city's transportation system and encourage multi-modal transportation.

The draft plan can be viewed on the project website at **www.mdt.mt.gov/pubinvolve/whitefish** beginning Saturday, January 5, 2008. In addition, hard copies will be available at the City's Public Works Department on Monday, January 7. Comments on the draft Plan will be solicited until January 31, 2008. Comments can be submitted via the project website, or by mail to the following address: Robert Peccia & Associates, c/o Jeff Key, P.E., PO Box 5653, Helena, Mt. 59601. For further information you may call Karin Hilding, Senior Project Engineer, City of Whitefish 863-2450.

***Thanks to the Walking Man Frame Shop for their assistance with the Whitefish Transportation Plan Kids Art Contest.***

# WHITEFISH
## TRANSPORTATION PLAN

# SIGN IN SHEET

## PUBLIC MEETING NO. 3
**January 10th, 2008**

| NAME | ADDRESS / P.O. Box | City | Email Address |
|---|---|---|---|
| Courtney Feldt | 410 Iowa Ave | WF | courtmt@bresnan.net |
| Pat & Kim Cook | 112 Old Murray T. | WF | |
| Terri Nichols | 109 8th St. W. | WF | |
| Tom Thomas | P.O. Box 5588 | WF | |
| Paul Johannsen | PO Box 1248 | WF | |
| Sherla Bower | PO Box 1120 | WF | |
| [illegible] | 1465 Lakeview Ln | WF | |
| [illegible] | 1016 Greenwood Dr | WF | |
| Karen Reeves | 230 Missy Ln | WF | |
| Greg Gunderson | 840 1st St. | WF | |

SHEET 1 of 6

# WHITEFISH TRANSPORTATION PLAN

## SIGN IN SHEET

### PUBLIC MEETING NO. 3
January 10th, 2008

| NAME | ADDRESS / P.O. Box | City | Email Address |
|---|---|---|---|
| Great Northern Cycles | 104 OBrien Ave | Whitefish | GreatnorthernCycles @gmail.com |
| KEN & MARIE MECKEL | 1129 W. 7th ST | WF | |
| GREGG ALEXANDER | 510 BLANCHARD LAKE RD | WF | |
| DANNA PRINCE | 510 BLANCHARD LAKE RD | WF | |
| Steve Quinell | 523 West 4th St | WF | |
| Gaye + Joel Lockwood | 1380 Karrow Ave | WF | gayelockwood@yahoo Joel@ozoneonline.com |
| Bill Klein | 700 Monegan | WF | |
| Klaus Heinrich | 610 Monegan | WF | |
| John Chaney | 609 Baker | WF | |
| MARGARET MURDOCK | 185 RESERVOIR RD | WF | |

SHEET 2 of 6

# WHITEFISH TRANSPORTATION PLAN

## SIGN IN SHEET

**PUBLIC MEETING NO. 3**
**January 10th, 2008**

| NAME | ADDRESS / P.O. Box | City | Email Address |
|---|---|---|---|
| SHARLOT BATTIN | 185 RESERVOIR RD. | WF | |
| JEANNE TALLMAN | 967 COLORADO AV. | WF. | |
| DON DUBEAU | ✓ ✓ | ✓ | |
| Aleisa and Rick Stevens | 344 Blanchard Hollow | WF | |
| Kim Sands | PO Box 4761 | WF | |
| Chet Wram | | WF | |
| Ted Belcer | 230 Meadows Rd | WF | |
| KEN & MAUREEN CORDOVA | 150 LOST COON TRAIL | WF | |
| JEFF CLAUSEN | 215 ARMORY | WF | |
| George Shryock | 6 Riverside | WF | |

SHEET 3 of 6

# WHITEFISH TRANSPORTATION PLAN

## SIGN IN SHEET

### PUBLIC MEETING NO. 3
January 10th, 2008

| NAME | ADDRESS / P.O. Box | City | Email Address |
|---|---|---|---|
| Marie Jo Lach | | | |
| [illegible] | | | |
| Scott Sorensen | W. F 285 Wildbrook | | |
| Peter Ellerval | 305 Baker Ave | W.F. | |
| Cameron Blake | PO BOX 1480 | WF | |
| Peggy Sue Amolon | PO BOX 4903 | WF | peggysue@cybernet.net |
| Doug Pitman | #1 [illegible] way | WF | |
| Scot Blair | 908 Harrow Ave. | WF | scotblair@hotmail.com |
| Patti Codiga | 112 Old Morris Trail | | pcodiga@ironhorsemt.com |
| Julie Ferchy | | WF | Snowperch@centurytel.net |

SHEET 4 of 6

# WHITEFISH
## TRANSPORTATION PLAN

# SIGN IN SHEET

## PUBLIC MEETING NO. 3
## January 10th, 2008

| NAME | ADDRESS / P.O. Box | City | Email Address |
|---|---|---|---|
| George & Roberta Smith | 963 Colorado Ave | Whitefish 59937 | mtsmiths@centurytel.net |
| Anne Shaw MORAN | P.O. BOX 4472 | Whitefish 59937 | ~~asmor~~ asm@digisys.net |
| Dick Zuellner | 1565 Veeman | WF | |
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SHEET 5 of 6

# WHITEFISH TRANSPORTATION PLAN

# SIGN IN SHEET

## PUBLIC MEETING NO. 3
**January 10th, 2008**

| NAME | ADDRESS / P.O. Box | City | Email Address |
|---|---|---|---|
| Nancy & Mark Svennungsen | 1465 Lakeview Ln | W.F. | mnsvennu@centurytel.net |
| SHEILA Ludlow | MDT | | |
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SHEET 6 of 6

# Whitefish Transportation Plan
# Urban Corridor Study of US 93
# Public Information Meeting #4 Summary (08/19/08)

## Introduction

The fourth public information meeting for the Whitefish Transportation Plan and Urban Corridor Study of US 93 projects was held on Tuesday, August 19, 2008 in the Whitefish City Council Chambers, 402 East Second Street. The meeting occurred between 7:00 and 9:00 p.m. and included a PowerPoint presentation beginning about 7:10 p.m.

The meeting was attended by the following agency and Consultant Team members:

| | |
|---|---|
| Shane Stack | MDT Missoula District |
| Sheila Ludlow | MDT Statewide and Urban Planning Section (Helena) |
| Karin Hilding | City of Whitefish |
| Dan Norderud | Robert Peccia & Associates (RPA - Helena) |
| Scott Randall | Robert Peccia & Associates (RPA - Helena) |

Ten (10) members of the public attended the meeting including Nancy Woodruff, a member of the Whitefish City Council. Copies of the sign-in sheets from the meeting are attached; however, not all signed the attendance sheets for the meeting since some joined the meeting in progress.

## Meeting Purposes

The purposes of the public informational meeting were to:

- Provide an update on the Whitefish Transportation Plan;
- Describe work completed to date and next steps;
- Describe identified corridor problems and needs;
- Present an overall "vision" for the US 93 corridor and outline goals for corridor improvements;
- Briefly discuss preliminary design and improvement options and other strategies under consideration; and
- Get comments on issues and the range of preliminary options under consideration for the corridor.
- Solicit input from the public on any new ideas (improvement options) not identified during the presentation that should be considered for the corridor.

## Meeting Summary

Dan Norderud of Robert Peccia & Associates (RPA) began the meeting at 7:10 p.m. and introduced

representatives of the City of Whitefish, MDT and Consultant Team members. He then began a PowerPoint presentation focused on the Corridor Study project.

Mr. Norderud summarized the current status of the Whitefish Transportation Plan and highlighted major work activities completed since the Plan was presented at a January 2008 public meeting. He noted that as a result of comments received from the City-County Planning Board, the Transportation Plan will not be finalized until recommendations from the Corridor Study have been incorporated and discussed. He stated that the Transportation Plan and Corridor Study will be completed on a more parallel track than originally proposed.

Mr. Norderud provided an update of work progress for the Urban Corridor Study and noted that an Environmental Scan and five Technical Memos supporting the study have been completed. The Environmental Scan identifies environmental resources and issues with the potential to influence the type, location, or design of future improvements to US 93 through Whitefish and documents the concerns of regulatory agencies early in the process. He explained the memos "mirror" chapters from the Corridor Study and present relevant background information about the corridor's setting, the current and future operations of US 93, corridor issues and needs, and offer a vision for what US 93 improvements should accomplish. Further, he pointed out that one of the memos outlines a range of design and improvement options and other strategies to help meet identified corridor needs.

Dan emphasized that no decision has been made yet about which design option or strategy may be best suited for the corridor. He indicated that travel demand modeling and operational analyses for the design options shown on the meeting handout have been completed with the next phase of the corridor study work focused on screening options against a detailed set of criteria to help identify the most reasonable option(s).

Mr. Norderud outlined work to be completed over the next four months and highlighted major activities including a future public meeting to discuss the recommendations in the Draft Corridor Study. He stated that both the Corridor Study and Transportation Plan projects should be completed around the end of the year.

**Summary of Technical Memos:** Mr. Norderud then presented a series of slides summarizing the content of five Technical Memos prepared for the Corridor Study. The topics of these memos and their general content are highlighted below:

- *Analysis of the Existing Transportation System.* The memo discusses the physical characteristics of the existing road and street network in the corridor, its operation (Level of Service) and its safety performance. It also describes other available transportation modes and facilities including non-motorized facilities, transit, and rail.

- *Current/Planned Land Uses, Community Characteristics, and Environmental Setting.* The memo examines current and planned land uses and land use controls within central Whitefish and discusses key demographic and socio-economic characteristics and trends in the Whitefish community and corridor study area. The memo also describes environmental considerations

that could potentially influence the location or design of US 93 through the City of Whitefish.

- *Analysis of Future Conditions on US 93 Through Whitefish.* The memo summarizes the future traffic conditions and operations of the US 93 corridor in Whitefish expected to occur in the year 2030. The analysis described in the memo establishes a "baseline" of future traffic conditions that can be used to help evaluate potential design and improvement options in the US 93 corridor.

- *Corridor Issues, Corridor Vision & Goals, and Statement of Purpose & Need.* The memo discusses issues and a "vision" for the corridor and reviews past community input on corridor issues and needs from five planning efforts and projects undertaken in the community since 1995. Considered together, these planning efforts and projects generated a significant body of public and agency input on issues, problems, needs and desires for the US 93 corridor through Whitefish.

- *Preliminary Conceptual Design and Improvement Options for the Corridor.* The memo outlines the design and improvement options and other strategies under initial consideration for the US 93 corridor through Whitefish. These designs and strategies will be subject to a multi-step screening process to help determine those meriting further detailed study.

**Summary of Corridor Issues and Needs:** Mr. Norderud then showed a series of slides highlighting the following fundamental corridor needs based on previous input from community planning efforts and MDT's design projects:

- Need to Enhance Capacity and Improve Operational Efficiency
- Need to Improve Flow of Large Trucks in Corridor
- Need to Address Geometric and Design Deficiencies
- Need to Upgrade US 93 Infrastructure
- Need to Enhance Safety for Facility Users

He also noted that corridor improvements need to consider local land use plans and the City's Bicycle and Pedestrian Master Plan; need to be conscious of environment and community character; and need to be feasible to implement.

**Corridor Vision:** Dan presented a slide outlining a corridor vision and commented that the vision recognizes the identified needs for the corridor and highlights that US 93 serves as both a regional transportation route and as a local main street in Whitefish. Corridor improvements must attempt to balance the regional mobility needs with the local transportation functions of US 93.

Dan then presented slides showing the goals developed to support the corridor vision and noted numerous objectives for achieving the goals have been developed. The goals and objectives for achieving the goals will form the basis for screening criteria used to help evaluate design and improvement options.

**Overview of Potential Design Options and Strategies for the Corridor:** Mr. Norderud then showed a series of slides related to the conceptual design and improvement options and transportation strategies under initial consideration for the corridor. He explained the designs and options under consideration generally consist of:

- All alternatives for the Whitefish urban area described in the US Highway 93 Somers to Whitefish Final Environmental Impact Statement (FEIS);
- Design options developed after the Record of Decision (ROD) on the FEIS as part of project development activities for the MDT's Whitefish Urban project;
- Recommendations from the Whitefish Downtown Business District Master Plan; and
- Other strategies that may potentially help relieve congestion and reduce future travel demands on the US 93 corridor.

Dan pointed out the US Highway 93 Somers to Whitefish FEIS considered several groups of alternatives including:

- Improving a parallel corridor to US 93;
- Providing a bypass route around the City;
- Reconstruction to add capacity on US 93;
- Making minor "spot" improvements to existing US 93;
- Improving transit opportunities;
- Implementing measures to reduce demand for traffic to drive on US 93; and
- Taking no action (No Build).

Mr. Norderud described the design alternatives evaluated in detail in the FEIS and the principal features of the Preferred Alternative for US 93 identified in the ROD.

He then noted that MDT advanced two reconstruction projects on US 93 through Whitefish to implement the Preferred Alternative identified in the ROD. These design projects involved a local Citizens Working Group (CWG) to provide input on design matters for US 93. Based on the CWG input and work done for MDT's Whitefish Urban project, several changed conditions in the community with design ramifications for US 93 were identified. MDT's design consultant "updated" the design configuration for the Preferred Alternative to reflect new capacity needs on US 93 which resulted in a proposed "Modified ROD Configuration."

Dan commented that three additional design concepts were developed in response to newly identified concerns or community desires expressed in the ongoing Growth Policy and Downtown Business District Master Plan projects. These were identified as the "Contra-Flow Configuration," the "Truck Route Configuration," and the "Downtown Business District Master Plan Configuration."

Dan referenced a handout and displays available at the meeting showing 7 design configurations considered in the Somers-Whitefish FEIS and the 4 configurations developed after the ROD. He pointed out these options generally represent the most obvious ways to accommodate traffic flows within the corridor—two directional or one-way travel, couplet configurations using all or portions of Spokane and Baker Avenues, using 2, 3 or 4 lanes to accommodate traffic, and providing east

west links between Spokane and Baker Avenues. He noted that without going substantially beyond this project area, no new or "previously undiscovered" design configurations are proposed for the corridor.

Dan also briefly discussed the potential indirect benefits to the corridor that may result from locally implemented "off-system improvements and several options or strategies not applicable to the corridor. He pointed out the Transportation Plan examines other potential local street improvement projects that could help divert traffic from US 93 or offer alternate travel routes for some facility users. He stressed that these locally implemented projects should not be viewed as essential "add-ons" to corridor designs.

Mr. Norderud stated that Transportation Demand Management (TDM) strategies (ridesharing, park and rides, telecommuting, transit-oriented development, etc.), Transportation System Management (TSM) projects (low cost, "tune-up" type improvements), transit improvements, and Intelligent Transportation System (ITS) strategies will receive initial consideration in the Corridor Study.

He also identified several options and strategies that do not appear to merit consideration for the corridor because they are too far removed from the corridor to divert traffic, have the potential to create unacceptable neighborhood impacts, or have a "regional" focus not suited to the US 93 corridor.

**Conclusion:** Mr. Norderud concluded his presentation by summarizing upcoming work efforts for the Corridor Study. These efforts will focus on screening design options and transportation strategies and sharing recommendations for the corridor with interested agencies and the public. He then asked the audience to share their comments on the corridor issues and vision outlined during the presentation and the range of design options under consideration for the corridor.

## Public Comments/Questions

The following public comments or questions were heard during the meeting:

**What is your opinion about one-way streets in the downtown?** Mr. Norderud noted that option with one-way traffic configurations will be duly considered and the operational analyses presented in the Corridor Study. One-way streets can typically move lots of traffic in an efficient manner. However, there are other considerations for their use and some evidence that suggests one-ways may not be the "best" option for some downtown areas.

**Is it possible to build a new bridge across the Whitefish River (at 7th Street) and how much influence does permitting requirements potentially have on the design of such a structure?** Dan explained that it is possible to design a bridge in a manner that minimizes impacts on the river and its associated riparian environment. A variety of federal, state and local water quality regulations will apply at highway crossings of the Whitefish River and these regulations would influence the design of a bridge. Impacts caused by such a project must also be mitigated—providing replacement wetlands is a good example of a typical mitigating measure for such impacts. Shane Stack from MDT noted that Section 404 regulations can be very stringent and the Corps of Engineers can require implementation of a design that does the "least harm" to surface waters.

**Karin Hilding** commented about the potential benefits that might be realized if park-and-ride lots were paired with low cost bicycle rental service. She felt this could be a way to encourage summer peak season visitors to use alternate transportation modes and could help reduce the numbers of vehicles on the US 93 corridor.

**When can corridor improvements be built?** Shane Stack addressed this question and commented that funding for improvements from MDT is extremely tight and providing a date when the project could be implemented is very difficult. It depends to a large extent on the availability of funding for corridor improvements. He explained that there are federal and state environmental compliance processes that must be followed and the complexity and time requirements associated with this task will depend on the design option selected. Implementing improvements will also require developing design plans, acquiring right-of-way (if needed), and programming the project based on available funding.

Since it is unlikely that improvements to US 93 through Whitefish would be completed very soon given the current funding situation, a member of the audience asked why 2030 was being used as a planning horizon for the corridor study instead of a date much farther into the future (like 2050). These concerns were acknowledged and it was pointed out that using such a horizon year would require making uncertain assumptions about future growth and employment in Whitefish. This information is not readily available from local planning agencies and would be subject to many assumptions regarding community growth over the next 40+ years. Additionally, there is no certainty over what type and how much funding will be available in the long range future.

**Can traffic signals be adjusted to account for seasonal variations in traffic?** Yes, software and sophisticated controllers associated with new signal systems allow great flexibility with regard to signal timing. To achieve optimum efficiency, traffic signals must be monitored and adjusted to serve changing traffic patterns or daily variations in traffic passing through the signalized intersection. Different signal timing plans can be developed to reflect the time of day, day of week, and season of the year. Traffic engineers typically collect detailed information about traffic patterns, volumes and speeds. Once this data is analyzed, new timing plans are developed and field adjustments are implemented as required.

**The meeting concluded at about 8:30 p.m.**

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# Whitefish Transportation Plan
# Urban Corridor Study of US 93
# CAC Meeting #1 Minutes (April 17, 2007)

## Introduction

The first of four anticipated meetings of the Citizens Advisory Committee (CAC) was held at the Whitefish Public Library conference room on Tuesday, April 17th began at 5:30 p.m. The CAC is an ad hoc committee for the Whitefish Transportation Plan and Urban Corridor Study of US 93 projects appointed by the Whitefish City Council during March 2007. The following people attended the meeting:

**CAC Attendees**

| | |
|---|---|
| Sabine Brigette | Citizen |
| Bridger Kelch | Whitefish Police Department |
| Mary Jo Look | Citizen |
| Shirley Jacobson | Whitefish City Council |
| Mary Person | Business Owner |
| George S. Gardner | Citizen |
| Don Spivey | Citizen |
| Fred Jones | Big Mountain Resort |
| Jerry House | Whitefish School District |
| Gary Stephens | Whitefish Business Owner/Heart of Whitefish |

**Agency/Consultant Team**

| | |
|---|---|
| Karin Hilding | City of Whitefish |
| Sheila Ludlow | MDT Statewide and Urban Planning Section (Helena) |
| Shane Stack | MDT Missoula District Office (Missoula) |
| Jeff Key | Robert Peccia & Associates (RPA - Helena) |
| Dan Norderud | Robert Peccia & Associates (RPA - Helena) |

**Others Present**

| | |
|---|---|
| Rick Cunningham | Whitefish Snow Bus |

Appointed CAC members Monte Gilman and Dale Duff were not present. Bridger Kelch attended the meeting in place of Mike Ferda and will do so for the remainder of the project. Mary Jo Look, Mary Person, and George Gardner are designated as alternate members of the CAC.

Meeting participants were provided with an agenda and other information to support and foster discussion during the meeting.

# Meeting Purpose

The purposes of this initial meeting were to: 1) introduce Consultant Team and agency representatives to CAC members; 2) provide background on the community-wide Transportation Plan and Urban Corridor Study projects and project schedules; 3) establish and discuss the role of the CAC in the projects; 4) discuss known issues related to transportation in the community; and 5) solicit input on other issues or concerns relevant to transportation planning in the Whitefish area.

# Meeting Summary

Jeff Key of Robert Peccia & Associates (RPA) began the meeting by asking those in attendance to introduce themselves and indicate what motivated their interest to participate in this transportation planning effort. Discussions at the meeting then focused on the following items:

**Overview of Projects:** Jeff Key, RPA's Project Manager, provided an overview of the Transportation Plan and Urban Corridor Study projects. Copies of slides from a PowerPoint presentation made to the Whitefish City Council on April 16 were provided to those in attendance. The slides presented background information about each project, summarized major work tasks and milestones for the projects, and outlined planned public outreach activities. Additionally, the slides identified the study area boundary for the Transportation Plan (the same area considered in the community's Growth Policy) and listed elements that will be emphasized in the plan.

Mr. Key noted that while several transportation studies have been completed for specific areas, no comprehensive Transportation Plan has ever been completed for the City of Whitefish and its surrounding area. He stressed that the Urban Corridor Study will be developed within the context of and concurrent with the Whitefish Transportation Plan. This approach allows for a focused look at US 93 through Whitefish based on the consideration of existing and planned land use changes and a detailed evaluation of community-wide transportation needs and desires. The corridor study will allow for a "fresh look" at issues associated with US Highway 93 through Whitefish and offers the opportunity to examine a full range of design options for the facility.

Mr. Key emphasized that these new planning efforts will be sensitive to prior community input and projects like: previous "subarea" transportation studies; the US Highway 93–Somers to Whitefish Final Environmental Impact Statement (FEIS); the Downtown Business District Master Plan; and the community's current Growth Policy Update project. He emphasized the value of previous efforts by the Citizens Working Group (CWG)—a group previously established to provide design input for the "Whitefish Urban" and "Whitefish-West" projects under development by the Montana Department of Transportation (MDT).

**CAC Guiding Parameters:** Mr. Key provided those attending with a handout discussing the CAC's anticipated role in the Whitefish projects. He explained the CAC will act as an advisory group with a much broader focus than the former CWG. While the CWG generally focused on two specific reconstruction projects on Highway 93, the CAC will be asked to help the Consultant Team identify community-wide transportation needs and issues. The CAC will be asked to serve as a

sounding board as recommendations to address identified needs and issues are developed.

Mr. Key then outlined the anticipated roles and responsibilities of the CAC and the Consultant Team. CAC members acknowledged the anticipated responsibilities. Several members of the CAC who previously served on the CWG group indicated that considerable time and effort was spent in 2005 on issues that will be relevant to these new projects. The Consultant Team acknowledged this past work and indicated copies of the minutes from past CWG meetings are available. Several CAC members expressed an interest in viewing these minutes, so it was agreed that copies of all previous CWG meetings and a public open house meeting held during April 2005 will be provided to all CAC members.

Gary Stephens requested that the Consultant Team provide relevant background materials to help CAC members during their review of project deliverables.

**Review of Transportation Issues Theme Boards:** Mr. Key expressed that the Consultant Team recognizes that significant community input and discussion about transportation issues and the Highway 93 corridor has already occurred in Whitefish. He stated that in preparation for the April 16 Public Open House and first CAC meeting, RPA reviewed public comments received during several important projects in the Whitefish area including:

- US Highway 93 - Somers to Whitefish FEIS (1994)
- Downtown Business District Master Plan (approved by the Whitefish City Council in early 2006)
- Whitefish Urban & West Projects (MDT and WGM Group)
  - Minutes from the Public Open House Meeting (April 2005)
  - Minutes from Whitefish Urban & West Highway 93 CWG meetings (2005)
- Whitefish Growth Policy Update (2006/2007)
  - Draft Elements of Growth Policy Update
  - Summaries of comments obtained through community visioning sessions
  - Summaries of community surveys

Mr. Key indicated the Consultant Team's intention was to acknowledge past work and build upon known transportation issues and concerns in the Whitefish area. As a starting point, RPA developed several transportation issues "theme" boards focusing on the following topics: Traffic Operations, Safety, Trucks, Pedestrian/Bicycle Facilities, Parking, Land Use/Growth, Aesthetics, and the Natural and Human Environments. Each board provided a broad issue statement for each topic and a list of specific conditions or concerns relating to the issue. The issues boards were made available to the CAC both as large display boards and as handouts.

The issue statements and associated conditions or concerns listed on each issue board were then reviewed and verified with CAC. Input was solicited from members about new or additional concerns related to each topic before moving on to successive issues boards.

Based on the review of the issues boards, the following new items were identified:

**Traffic Operations**

- The real issue in Whitefish is the lack of alternate north-south routes (like Wisconsin Avenue) serving Big Mountain and areas north of the railroad.
- Whitefish needs another parallel north-south route east of US Highway 93 with a railroad crossing.

**Safety**

- Pedestrian and bicyclist safety near schools in Whitefish is important.
- The center two-way left turn lane on Highway 93 at the south edge of Whitefish poses a safety concern. The design contributes to conflicts between opposing vehicles making left turns.
- The community hospital has moved to a new location and traffic patterns are changing. CAC members noted an emergency only access from Highway 93 to the hospital is being used for general access to the facility.

**Trucks**

- Truck traffic generated by construction activities in the Whitefish area is substantial and contributes to congestion within the community.
- Several truck bypass possibilities were mentioned.

**Pedestrian/Bicycle Facilities**

- No additional comments from CAC.

**Parking**

- No additional comments from CAC.

**Land Use/Growth**

- The CAC recommended revising the last bullet item to say: "General support for managing growth in the community."

- Neighborhoods (like the railroad district) in Whitefish are changing from traditional uses and zoning regulations allow for increases in densities. In some cases, single family dwellings are being replaced by duplexes or multi-family housing. The model developed to help forecast future traffic conditions needs to be sensitive to these types of land use changes.

**Aesthetics**

- No additional comments from CAC. It was learned that a Walgreen's drugstore is proposed for the Highway 93 South.

  Don Spivey indicated that there has been lots of interest in the design/appearance of Highway 93 South over the years and mentioned that Doug Adams has been involved in an effort to reconsider the idea of installing a raised median on this section of roadway.

Fred Jones also commented that the current design of Highway 93 South does nothing for the appearance of the community. He stressed that changing the roadway's appearance is important and can help visitors recognize they have left the highway and entered the City.

**Natural Environment**

- No additional comments from CAC.

Dan Norderud provided a brief explanation of the term "PM-10 nonattainment area" and explained how the community received the designation.

**Human Environment**

- It was noted that efforts to clean up soil contamination at the former Big Mountain Tire site are underway.

**Identification of Traffic Counting Locations:** Mr. Key related that the scope of work for the project included doing traffic movement counts at 27 intersection locations within the study area. He provided a list of critical intersections for evaluation and asked the CAC for help in identifying additional traffic count locations. As a result, the following potential count locations were identified:

**Signalized Intersections:**

1. 2nd Street/Spokane Avenue
2. 2nd Street/Central Avenue
3. 2nd Street/Baker Avenue
4. Wisconsin Avenue/Edgewood Place
5. Spokane Avenue/13th Street Avenue
6. Spokane Avenue/18th Street
7. U.S. Highway 93/MT Highway 40

**Unsignalized Intersections:**

8. U.S. Highway 93/Blanchard Lake Rd.
9. U.S. Highway 93/JP Road
10. U.S. Highway 93/Karrow Avenue
11. U.S. Highway 93/State Park Road
12. Karrow Avenue/7th Street
13. Baker Avenue/4th Street
14. Baker Avenue/5th Street
15. Baker Avenue/7th Street
16. Baker Avenue/13th Street
17. Spokane Avenue/1st Street
18. Spokane Avenue/4th Street
19. Spokane Avenue/5th Street
20. Fir Avenue/2nd Street
21. Fir Avenue/4th Street
22. 2nd Street/Kalispell Avenue
23. Pine Avenue/2nd Street
24. Pine Avenue/4th Street
25. Pine Avenue/7th Street
26. Ashar Avenue/7th Street
27. Skyles Place/Wisconsin Avenue

A map showing the potential count locations will be produced and forwarded to the City of Whitefish Public Works Director and Assistant City Engineer for review and approval.

## Other Miscellaneous Discussion Items

Jerry House noted that there has been lots of time and effort spent on considering transportation in the community and volumes of information exist. Mr. Key acknowledged the comment and reiterated that the intent is to make use of and build upon existing information for the Transportation Plan and Corridor Study projects.

Don Spivey believes that it is very important to ensure the public is involved in the process. The group then generally discussed ways to engage the public in the development of the transportation plan including targeting specific groups (like parent groups at schools) to enhance "word of mouth" knowledge of the project and ensuring the project is publicized in local newspapers. It was agreed that Press Releases summarizing CAC meeting discussions will be written and provided to the Whitefish Pilot and Whitefish Free Press after each meeting.

Gary Stephens commented on his desire to see a transportation plan that was realistic and fundable. He noted many plans have been done within the community and seem to sit on the shelf.

## Conclusion

Mr. Key concluded the meeting by summarizing what was accomplished and briefly outlining upcoming activities for the projects. Future meeting dates were generally discussed and it was determined that the next CAC meeting would be scheduled for early June. The group asked that no CAC meeting be scheduled for August.

**The meeting concluded at 7:35 p.m.**

## Action Items for Consultant Team

1. Provide CAC members with copies of the following documents:
   - Minutes from the Public Open House Meeting for the Whitefish Urban & West projects
   - Minutes from Whitefish Urban & West Highway 93 CWG meetings
   - Downtown Business District Master Plan
   - Whitefish Pedestrian/Bicycle Plan

2. Write Press Release for April 17, 2007 CAC Meeting

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# Whitefish Transportation Plan
# Urban Corridor Study of US 93
# CAC Meeting #2 Minutes (July 16, 2007)

## Introduction

The second meeting of the Citizens Advisory Committee (CAC) was held at the Whitefish Public Library conference room on Monday, July 16th, 2007 and began at 5:30 p.m. The CAC is an ad hoc committee for the Whitefish Transportation Plan and Urban Corridor Study of US 93 projects appointed by the Whitefish City Council. The following people attended the meeting:

**CAC Attendees**

| | |
|---|---|
| Mary Jo Look | Citizen |
| Mary Person | Business Owner |
| George S. Gardner | Citizen |
| Don Spivey | Citizen |
| Nick Columbus | Whitefish Mountain Resort |
| Jerry House | Whitefish School District |
| Gary Stephens | Whitefish Business Owner/Heart of Whitefish |
| Monte Gilman | Whitefish Chamber of Commerce |
| Dale Duff | Citizen |

**Agency/Consultant Team**

| | |
|---|---|
| Karin Hilding | City of Whitefish |
| Sheila Ludlow | MDT Statewide and Urban Planning Section (Helena) |
| Jean Riley | MDT Statewide and Urban Planning Section (Helena) |
| Shane Stack | MDT Missoula District Office (Missoula) |
| Jeff Key | Robert Peccia & Associates (RPA - Helena) |
| Dan Norderud | Robert Peccia & Associates (RPA - Helena) |
| Scott Randall | Robert Peccia & Associates (RPA - Helena) |

Appointed CAC members Sabine Brigetta, Shirley Jacobsen, and Bridger Kelch were not present. Nick Columbus represented Whitefish Mountain Resort and will replace Fred Jones who recently retired.

Meeting participants were provided with an agenda and other information a week in advance to support and foster discussion during the meeting.

## Meeting Purpose

The purposes of this meeting were to: 1) update CAC members on the work status and project schedules for the Transportation Plan and Corridor Study projects; 2) discuss recent outreach

activities; 3) discuss several Technical Memorandums providing background information relevant to the community-wide Transportation Plan and Urban Corridor Study projects; and 4) solicit input on potential system improvements in the western portion of the study area and several other focus areas of the Transportation Plan.

# Meeting Summary

Jeff Key of Robert Peccia & Associates (RPA) began the meeting and asked those in attendance to introduce themselves. Discussions then focused on the following items:

## Overview of Project Status and Schedules

Jeff Key provided an update of work completed for the Transportation Plan and Urban Corridor Study projects. Mr. Key referred to a graphic listing major work tasks and the expected duration of each task. He pointed out that work is generally on schedule although the need to conduct intersection turning movement counts during the peak summer visitation period has caused some delays. The traffic counts are ongoing and should be completed near the end of July. Mr. Key explained that the timing of the CAC meeting and Public meeting #2 has slipped somewhat from the original schedule. He stated that a CAC workshop to present Transportation Plan recommendations would likely be held around the end of September.

Gary Stephens asked if Task 7 (Travel Demand Modeling of Existing and Projected Conditions) was behind schedule. Mr. Key acknowledged that work for Task 7 is not fully completed. However, the travel demand model of the existing network has been completed by MDT Planning and model runs have been made illustrating future conditions without any improvements. The task that looks at alternatives (Task 9) is in process and would desirably be completed by mid- to late-August. Task 19 should be modified to extend to the end of August.

## Review of Outreach Activities

Mr. Key then summarized several outreach activities that have occurred since the first CAC and Public Information Meetings held at the end of May. These activities included meetings with the following individuals or groups:

- Gary Danzyk of Glacier National Park to discuss potential use of NPS transit vehicles in area communities
- Eagle Transit to discuss transit issues and future needs in the north Flathead Valley
- Doug Adams to discuss new local efforts to add raised medians on US 93 south of 13th Street
- Resource Agency Meeting held in Helena on May 24, 2007
- Curt McIntyre to discuss the extension of Baker Avenue to JP Road
- Jerry House to discuss school district issues and concerns

## Presentation of Work To Date

Mr. Key then referred CAC members to the Meeting Materials Booklet provided prior to the meeting containing working draft copies of numerous Technical Memoranda. These memos

summarize key elements of the Transportation Planning effort and provide the results of analyses essential information that will be used to develop transportation system improvements.

**Study Area Boundary Memo** – Mr. Key indicated that this memo documents the study area selected for the Transportation Plan and the reasons for its selection. Jeff stated that the study area is the same as the planning area being considered in Whitefish's Growth Policy Update. CAC members had no comments on the memo.

**Goals and Objectives Memo** – Mr. Key noted that the Goals and Objectives memo lists a variety of transportation goals contained in Whitefish planning documents including the existing Whitefish City-County Master Plan, Whitefish Downtown Business District Master Plan, Flathead County Growth Policy, Big Mountain Neighborhood Plan, and the Transportation Element from the City of Whitefish's Draft Growth Policy. He stated the City's directive to incorporate the three goals from the Transportation Element of the Draft Growth Policy and highlighted several specific objectives from the document that have influenced work on the Transportation Plan including:

- a mandate for no new development in the Monegan Road area without an additional east-west connection;
- the need to explore ideas for a new grade-separated crossing of the BNSF; and
- the need to assess an alternate western route to help alleviate traffic on US 93 through Whitefish.

Gary Stephens commented that some additional goals or reframing of language is needed. Specifically, Mr. Stephens believes an overriding community goal is to preserve and enhance the character of Whitefish. He felt the goal listed in the memo under the Downtown Business District Master Plan that says "Accommodate increasing traffic volumes without degrading downtown businesses and the retail environment" is incompatible with the local goal of preserving the character of the community. He suggested changing the objective to read something like "traffic should be moved as efficiently as possible without detracting from the downtown." Under objectives on page 3 of the memo, it was suggested that the sixth bullet be revised to be more far reaching instead of just referring to local residential streets.

Monte Gilman questioned the need to take a look at bypass options as suggested by the Draft Growth Policy. This stimulated discussion among the group and it was generally agreed that bypasses (alternate west routes) need to be considered in the Transportation Plan to determine if the concept has merit and would provide general community benefits and help reduce traffic on US 93. This topic was discussed in more detail later in the meeting.

**Socioeconomic Data, Growth Trends and Land Use Assignments Memo** – Mr. Key briefly described the content of the memo and the importance of assigning land use and employment data to the Travel Demand Model. His discussion then focused on page 12 of the memo where growth rates for the community and future populations are discussed.

Jerry House commented that the use of a 2.5 persons per household rate may be low for Whitefish given his research for the Whitefish School system. He felt the persons per household number may increase somewhat in the future.

Jeff then referred the group to various graphics showing year 2030 projected dwelling units and retail and non-retail employment by Census Block in the study area. He indicated these were essential inputs for traffic modeling. Don Spivey asked what non-retail employment included and noted that many such jobs are attributed to residential areas. Jeff said these were work at home type jobs which are becoming more common.

Gary Stephens questioned the amount of retail employment attributed to the downtown area and felt it did not correlate to that projected for the area in the Downtown (WB-3 Zone). Gary cited a recognized employment statistic of 9 Full Time Employees (FTE) per 10,000 square feet (SF) of retail space and said that 144,000 SF of new retail space is called for in the Downtown Master Plan. Gary suggested that the number of retail jobs assigned to the downtown area may be on the order of 1,300 new retail jobs.

> **Note:** RPA followed up on this comment by revisiting the projected retail employment in the downtown area and the suggested FTE rate for retail space. The calculations showed that about 130 new retail jobs could be expected in the downtown area. The assignments of new retail employment presented for this area in the memo were shown to be consistent with projections for new retail space presented in the Downtown Master Plan. RPA provided this information to Gary Stephens on July 17 and he concurred with the employment projections for the downtown area being used in the model. RPA's employment rate amounted to roughly 13 jobs (full or part-time) per 10,000 SF of retail space.

**Future Capacity Issues Memo** – Jeff then directed the CAC members to the memo discussing future capacity issues. He said the memo was developed for the City of Whitefish to aid in their development of impact fees. He pointed out that the travel demand model generated traffic volumes on the local road system and it allowed calculate volume to capacity (V/C) ratios for road segments (areas between intersections). He highlighted several graphics presenting V/C ratios for road segments in the study area and a summary table highlighting roadways likely to experience capacity problems by 2030.

There were several comments from CAC members about the results shown in the table and that the results did not indicate the worst areas for traffic—particularly in the downtown area. Jeff replied that the results do not consider intersections and that another type of level of service analyses will be done to address capacity problems at intersections. He emphasized that the results are indicative of areas where problems are or will be occurring in the future if no roadway improvements are ever contemplated. Jean Riley commented that all the road segments listed in Table 1-3 on page 18 of the memo show V/C ratios exceeding 1.00. Ratios over 1.00 suggests roadways are over capacity and operating at an extremely poor level of service (LOS F). It was also pointed out that fixing intersections along these routes could substantially improve the LOS on road corridors.

**Traffic Calming Memo** – Jeff indicated that the Transportation Plan will include a chapter on Traffic Calming and described the purpose of such activities. Gary Stephens pointed out that the last paragraph on page 1 of the memo was not appropriate in his opinion since it implies traffic calming should only be used on lower function roads. The suggestion was made that some traffic calming techniques could be appropriate for "higher classification" roads (such as arterials) and used throughout the City to help maintain the character of the community.

**Overview of the Environmental Scan** – Dan Norderud indicated that work on the corridor study is ongoing and that such work includes preparing an environmental scan. The purpose of the environmental scan is to identify environmental issues or conditions that have the potential to influence the location, design or construction of improvements to US 93. He pointed out that meetings with resource agencies occurred in May 2007 and summaries of the meetings can be found in the Meeting Materials Booklet.

**US Highway 93 Bypass Review** – Jeff Key indicated that work directives for the Transportation Plan require RPA to identify and evaluate potential new western routes that might help alleviate traffic on US 93. He explained that RPA revisited four potential western alignments considered in the Somers-Whitefish Final EIS. The western route alternatives were modeled to determine potential future traffic volumes on each alignment and their impacts on US 93 and parts of the local road system. Model runs were completed both with and without alternate routes in place to determine their potential to reduce traffic on US 93. The preliminary modeling showed alternate routes would attract a notable amount of traffic (typically 7,000-15,000 vehicles in 2030); however, significant traffic volumes would likely continue on the existing US 93 corridor.

Mary Person related that considerable discussion about a bypass was heard during the development of the Growth Policy. Concerns were expressed over the amount of construction-related heavy trucks on the US 93 corridor destined for ongoing developments in the Whitefish area. Mary also raised the idea of continuing the Kalispell Bypass and developing an entirely new route offering an alternate north-south route to US 93.

Mary Jo Look commented that any bypass that is considered should connect at Highway 40 to have any chance of attracting through trucks. She also felt people would not want to "backtrack" (travel south on US 93) to access a westerly route like Alternative A.

Mary Person commented that the intersection of US 93 and Blanchard Lake Road (at Coffee Traders) is a concern and that it is particularly difficult to see the intersection during the winter. Jeff acknowledged the comment and indicated that a turning movement count will be performed at the intersection during July.

In general, the group felt Alternative D (Karrow Avenue) would be "politically impossible" in Whitefish and the neighborhood's successful past resistance to new development proposals confirms a high level of engagement along the corridor. Alternative B, a route requiring a crossing of Blanchard Lake, may not be viable due to community Lakeshore Protection ordinances and likely opposition from the U.S. Army Corps of Engineers. Alternative A does not connect to Highway 40 and its distance from the city may not attract much local traffic. Of the alternatives presented, Alternative C would probably be the most favorable since it follows a BPA powerline corridor. Mary Person pointed out that Alternatives B and C pass through the Blanchard and Lost Coon Lake area and both have the potential for substantial wildlife and wetland impacts.

There was discussion about whether the word "bypass" should be used. The group generally agreed that it may be best to refer to such options as western alternate routes. Karin Hilding felt the Transportation Plan needs to identify important future road connections and emphasize the need for and the long-term benefits of making such connections.

Jerry House commented that while discussing routes around the west side of Whitefish, it is important to recognize that other areas of the communities also have needs for alternate routes. He cited the need for new connections for those living on the north side of Whitefish. The group agreed with Jerry's comment and that the Transportation Plan should address needs in all areas of the community.

## Other Items Discussed

Jeff Key identified several emerging topics that will need to be considered in the Transportation Plan. These items are discussed below.

**Baker Avenue Extension.** Jeff indicated he had met with a local business owner regarding a proposal to extend Baker Avenue from its current end point to JP Road. Extending Baker Avenue southward would provide an alternate access route into businesses and land uses along US 93 south. Don Spivey was aware of this proposal and suggested that such a route might be best developed following the zoning boundary.

**Raised Medians for US 93 South.** Jeff stated he had recently talked with Doug Adams about a proposal to install raised and landscaped medians on US 93 from Highway 40 to 13th Street. He showed a set of preliminary concept plans. Don Spivey, a member of the committee for this effort, provided the group with a history of the local efforts to get medians installed on US 93 and stated the group will seek an endorsement of the proposal from the Whitefish City Council. Dale Duff said the median concept was presented during the development of the Somers-Whitefish EIS but the community was unsuccessful in getting the idea included with the Preferred Alternative. There was general discussion about how to address the median proposal in the Transportation Plan.

**Additional Railroad Grade Separation.** Jeff asked the group for ideas on where a new grade separation over the BNSF Railroad might be desirable. He pointed out that there is an existing at-grade crossing east of town on 2nd Street but enhancing the crossing is unlikely. He offered several potential locations for a new grade separation such as Columbia Avenue and the East Texas Avenue/Pine Avenue area. Don Spivey suggested a new crossing in the Cow Coulee area. The group expressed concern that a crossing in the Columbia Avenue area would be undesirable since there is a potential to generate lots of traffic in a residential area. Gary Stephens indicated there is a real need for another way to and from Big Mountain.

**City Beach Area Circulation.** Jeff indicated the City of Whitefish had asked RPA to review traffic circulation and parking issues in the City Beach area. Seasonal traffic volumes, narrow roadways and steep grades on some local streets, and the parking situation contribute to congestion and pose safety concerns for pedestrians and bicyclists in the area. Jeff highlighted these issues and asked for comments from CAC members. Don Spivey stated the Bike Committee had recommended that a one-way loop for traffic be established in the area to help improve safety. Karin Hilding described known circulation and parking issues near City Beach and pointed out a retaining wall along one of the roadways has started to fail. Jeff said RPA will take a detailed look at this area and will develop several improvement ideas that can be considered as part of the Transportation Plan.

## Next Meeting Date

Jeff asked the group about a likely date for the next CAC meeting. George Gardner indicated that WGM has set September 19th as the date for the next meeting on the Whitefish-West project. After considering comments, Jeff indicated the next meeting would be scheduled for the end of September or early October. He will contact CAC members with several dates during that time and set the next meeting date. He also pointed out that the next meeting will be a workshop to discuss preliminary recommendations and could require between 2 and 4 hours to complete.

**The meeting concluded at 7:45 p.m.**

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# Whitefish Transportation Plan
# Urban Corridor Study of US 93
# CAC Meeting #3 Minutes (January 8, 2008)

## Introduction

The third meeting of the Citizens Advisory Committee (CAC) was held at the Whitefish Public Library conference room on Tuesday, January 8th, 2008 and began at 4:00 p.m. The CAC is an ad hoc committee for the Whitefish Transportation Plan and Urban Corridor Study of US 93 projects appointed by the Whitefish City Council. The following people attended the meeting:

**CAC Attendees**

| | |
|---|---|
| Mary Jo Look | Citizen |
| Mary Person | Business Owner |
| George S. Gardner | Citizen |
| Don Spivey | Citizen |
| Nick Polumbus | Whitefish Mountain Resort |
| Gary Stephens | Whitefish Business Owner/Heart of Whitefish |
| Monte Gilman | Whitefish Chamber of Commerce |
| Sabine Brigetta | Citizen |
| Shirley Jacobsen | Whitefish City Council |
| Bridger Kelch | Whitefish Police Department |

**Agency/Consultant Team**

| | |
|---|---|
| Karin Hilding | City of Whitefish |
| Shane Stack | MDT Missoula District Office (Missoula) |
| Jeff Key | Robert Peccia & Associates (RPA - Helena) |
| Dan Norderud | Robert Peccia & Associates (RPA - Helena) |

CAC members Jerry House and Dale Duff were not present.

Meeting participants were provided with a copy of the draft Transportation Plan prior to the meeting.

## Meeting Purposes

The primary purpose of this meeting was to present the draft Transportation Plan document and its major components to CAC members. This was accomplished through a chapter-by-chapter discussion highlighting the analysis, findings, and recommendations in the document.

The meeting was also used to update CAC members on the current status of work for the Transportation Plan and Corridor Study and solicit general input from CAC members.

# Meeting Summary

Jeff Key of Robert Peccia & Associates (RPA) began the meeting with a few remarks about the project schedule and thanked the CAC members for their patience. The original intent had been to hold this meeting in late September or early October. However, holidays and the receipt of internal review comments on an administrative draft of the document affected the schedule more than anticipated. He stated that the goal is to have the Transportation Plan completed by the end of February and a draft of the Corridor Study should follow closely after the Transportation Plan. He reiterated that significant work has been and continues to be completed for the Corridor Study.

Jeff stated that the Plan will be presented for adoption by the City Council and meetings with both the Planning Board and City Council are planned within the next 4-6 weeks.

## Summary of the draft Transportation Plan

Jeff then began a chapter-by-chapter orientation and synopsis of the Transportation Plan for CAC members. Comments were encouraged at any time during the summary of the Transportation Plan. Key discussion and comments regarding individual chapters of the Transportation Plan are highlighted below.

**Executive Summary**

No comments received.

**CHAPTER 1: Introduction and Background**

**Don Spivey** commented that the City's Pedestrian and Bicyclist Trails Master Plan should be added to the list of community transportation planning documents listed on page 1-1. Don also asked about when the redesign work on the urban corridor section of US 93 in Whitefish might begin. Jeff responded that the corridor study and its recommendations must be completed and MDT must address the recommendations in a future NEPA process since this section of US 93 was addressed in the *US Highway 93 Somers-Whitefish Final EIS* (FEIS) and Record of Decision on the FEIS.

**CHAPTER 2: Existing Conditions**

**Gary Stephens** commented on Table 2-10 (2007 PM Peak LOS for Signalized Intersections) and wondered how an intersection with multiple approaches functioning at LOS C or better could result in an overall LOS of F for the intersection. Jeff indicated that the overall intersection LOS rating is not an average of the LOS on other approaches. One traffic movement, if impeded signigicantly enough, can adversely affect the overall LOS for an intersection.

**CHAPTER 3: Travel Demand Forecasting**

Jeff opened the discussion of this chapter by offering a caveat about the results of travel demand forecasting (i.e. traffic modeling). He indicated that the traffic volumes presented as the result of the modeling efforts for various scenarios should be viewed with caution. Although traffic volumes are

readily interpreted and understood, he cautioned that they are only representative of future conditions and the actual volume could vary substantially from the numbers shown. He stressed that the best indication of changes can be gained by looking at the magnitude (percent) of change in traffic volumes between year 2030 traffic volumes with and without the improvements associated with various modeling scenarios.

Considerable discussion occurred about modeling scenarios for western route alternatives (Scenarios 1-4). Jeff commented that traffic modeling allowed for a general assessment of the effects of a "bypass" on the community transportation system. He pointed out that modeling showed traffic would likely use such routes; however, the options fail to significantly reduce future traffic volumes through the core of the city. Additionally, the western route alternatives would be very costly projects with numerous environmental impacts and would likely meet substantial public opposition. For these reasons, the draft Transportation Plan does not include a recommendation for a new western route around Whitefish.

**Don Spivey** commented that in his opinion, a bypass is not a recognized "cure-all" for Whitefish's traffic issues but is one more piece of the puzzle that would help remove some of the trucks and RVs to reduce distractions and dangers on the US 93 corridor in the downtown.

**Mary Jo Look** stated that truck traffic does not enhance the downtown and she felt that people would bypass Whitefish if there was an option.

There was a general discussion of trucks in the downtown and the portions of the truck traffic comprised of through trucks and local construction vehicles. It was pointed out that an origin-destination (O and D) study would really be needed to accurately quantify through versus local truck traffic. Jeff pointed out that such efforts can be quite costly.

Karin Hilding felt that the idea of an alternate route around Whitefish may be desirable to many residents.

**Gary Stephens** suggested adding language somewhere in Chapter 3 that identifies the community growth scenario considered in the traffic model.

**CHAPTER 4: Projected Traffic Conditions (2030)**

Jeff pointed out that Chapter 4 provides information about where problems on the local transportation network may occur in the future and focused his discussion on the information presented in Table 4-3. The V/C ratios higher than 1.0 presented in the Table 4-3 suggest areas on the transportation network that may have insufficient capacity to accommodate future traffic. He pointed out that the information in the Table will likely be used by the City of Whitefish to help establish impact fees for new developments.

**CHAPTER 5: Problem Identification**

Jeff highlighted the signal warrant guidelines presented in section 5.2 of the Chapter and indicated that one or more warrants must be met before the installation of a signal can be considered. There

were general discussions about a future signal installation on Spokane Avenue at JP Road and planning for new signal installations.

**CHAPTER 6: School Transportation Considerations**

Jeff indicated that traffic and parking related to schools notably affect community traffic flows. He pointed out that the Transportation Plan recommends that the City consider implementing a Safe Routes to School (SRTS) program and indicated MDT has a funding program that may help. SRTS include actions to enhance pedestrian and bicyclist infrastructure, activities to educate and encourage more students to walk or bike to school, and enforcement activities to increase safety.

**CHAPTER 7: Traffic Calming**

Jeff stated that Chapter 7 presents a variety of traffic calming strategies that may be applicable in some situations in Whitefish.

**CHAPTER 8: Recommended Projects**

Jeff highlighted the recommendations for network improvements described in the draft Transportation Plan. He advised that the recommendations include Transportation System Management (TSM) measures, major street network improvements (MSN), and Future MSN improvments. The TSM measures are relatively low-cost actions designed to address safety and operational improvements. The MSN improvements are actions that are needed to meet the anticipated traffic demands in 2030. MSN projects typically require more extensive efforts to develop and are notably more expensive than TSM projects. Jeff stressed that project cost estimates do not include right-of-way acquisition costs or costs associated with preliminary engineering, incidental construction and construction engineering. In some cases, these costs (particularly right-of-way acquisition costs) may be substantial.

**Karin Hilding** commented that the Whitefish-West project on US 93 may be split into several projects for construction. She felt that consideration should be given to implementing a walkway project within the Whitefish-West corridor (from Grouse Mountain to the downtown) since lots of people walk in this area and there was a recent pedestrian accident recorded along this stretch of US 93.

**Shane Stack** pointed out that the cost identified for the Whitefish-West is considerably higher than that shown in the draft Transportation Plan. He agreed to provide a current cost estimate for the project.

**CHAPTER 9: Miscellaneous Transportation System Consideratons**

Jeff stated that this chapter addresses several topics including a discussion of the pros and cons of several roadway typical sections identified in the Growth Policy and transit considerations in the community. Sections 9.2 and 9.3 are intended to "plant the seed" for developing a transit partnership with Glacier National Park and for ensuring new developments are designed with future

public transit opportunities in mind. Funding has traditionally been a limiting factor for public transit services.

**CHAPTER 10: Financial Analysis**

Jeff commented that this chapter presents federal, state, and local funding sources for transportation related improvements. The chapter also identifies current and future funding for transportation projects that may be available to the City of Whitefish.

Gary Stephens pointed out that the Whitefish Resort Tax should be included under the Local Funding Options discussion. The resort tax was recently extended through 2023 in Whitefish.

## General Comments and Discussion

Jeff concluded his summary of the draft Transportation Plan by requesting CAC members to review the document and set the end of January as a target date for receiving written comments.

**Don Spivey** stated that some of his written comments will likely pertain to the corridor as well as the Transportation Plan.

**Mary Person** commented that knowing what the situation in Whitefish will be in 2030 is difficult given our dependence on gasoline. The price of gas could be so expensive in the future that our transportation modes change significantly. Jeff pointed out that Transportation Plans need to be revisited periodically (every 5 years or so) to keep current with changing conditions within the community.

**Gary Stephens** stated that he would like to see the Plan include a table (like Table 2-13) that illustrated Level of Service conditions at key intersections in the community in 2030 since the data may help establish priority areas for transportation improvements. Jeff said that this information will be presented in the final version of the Plan.

Gary also indicated that Figure 2-15 shows the intersections along Wisconsin Avenue function acceptably (LOS B/C) but in reality traffic backups are common during the AM and PM peak hours due to left turning vehicles along the roadway. He felt the LOS at these intersections should be lower. Jeff responded by noting that RPA did not conduct turning movements at these intersections since recent data was available through other Traffic Impact Studies (TISs). He stated that when the counts for the TISs were conducted could influence the results of the LOS analysis, particularly if there is a notable seasonal variation in traffic.

Gary also commented that he felt it was necessary that the plan clearly depict the future transportation network and recommended adding a figure showing the future system based on functional class. It was agreed that such a figure would be added to the Plan.

Gary concluded his comments by stating that some method of prioritizing recommended projects should be done to help direct future community efforts towards implementing improvement projects. He felt that prioritizing improvements by need, effectiveness, or timeframe is essential.

Other CAC members agreed with the idea of setting priorities. Jeff responded by noting that other communities where RPA has completed plans have also asked for help setting priorities. For example, Kalispell did not want to set priorities for individual projects but rather establish priorities by group (projects with higher need versus long-term needs). Projects could then be advanced based on the availability of funding or other factors. Jeff acknowledged the benefits of setting priorities and agreed to do this for the final version of the Transportation Plan.

**Mary Person** pointed out that the conservation easements exist in the some areas along the route where improvements to Old Morris Trail (Project FMSN-3 in the Plan) are proposed.

**Karin Hilding** reiterated the need for pedestrian improvements as a short-term improvement within the Whitefish-West corridor close to the downtown.

**George Gardner** asked if the 7th Street Bridge would be considered a collector. Jeff indicated it would likely be associated with the city's arterial network.

**The meeting concluded around 6:00 p.m.**

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# Whitefish Transportation Plan
# Urban Corridor Study of US 93
# CAC Meeting #4 Minutes (August 19, 2008)

## Introduction

The third meeting of the Citizens Advisory Committee (CAC) was held at the Whitefish Public Library conference room on Tuesday, January 8th, 2008 and began at 4:00 p.m. The CAC is an ad hoc committee for the Whitefish Transportation Plan and Urban Corridor Study of US 93 projects appointed by the Whitefish City Council. The following people attended the meeting:

**CAC Attendees**

| | |
|---|---|
| Mary Jo Look | Citizen |
| Mary Person | Business Owner |
| George S. Gardner | Citizen |
| Don Spivey | Citizen |
| Nick Polumbus | Whitefish Mountain Resort |
| Gary Stephens | Whitefish Business Owner/Heart of Whitefish |
| Monte Gilman | Whitefish Chamber of Commerce |

**Agency/Consultant Team**

| | |
|---|---|
| John Wilson | City of Whitefish |
| Karin Hilding | City of Whitefish |
| Shane Stack | MDT Missoula District Office (Missoula) |
| Sheila Ludlow | MDT Statewide and Urban Planning Section (Helena) |
| Dan Norderud | Robert Peccia & Associates (RPA - Helena) |
| Scott Randall | Robert Peccia & Associates (RPA - Helena) |

CAC members Jerry House, Sabine Brigetta, Shirley Jacobsen, and Bridger Kelch were not present. Gary Stephens joined the meeting as it was in progress. Dale Duff arrived near the conclusion of the meeting and attended the public meeting. David Taylor, City of Whitefish Planning & Building Director, was also in attendance

Meeting participants were provided with a series of Technical Memos prepared for the corridor study prior to the meeting and a meeting handout illustrating design concepts for the corridor previously identified in the Somers to Whitefish Final EIS and other configurations developed after the Record of Decision on the Final EIS.

## Meeting Purposes

The primary purpose of this meeting was to present and discuss five Technical Memorandums prepared for work tasks associated with the Corridor Study. This was accomplished through a

memo-by-memo review highlighting the key information, findings, and analyses from the following memos:

- **Analysis of the Existing Corridor Transportation System**
- **Current/Planned Land Uses, Community Characteristics, and Environmental Setting**
- **Analysis of Future Traffic Conditions on US 93 through Whitefish**
- **Corridor Issues, Corridor Vision & Goals, and Statement of Purpose & Need**
- **Preliminary Conceptual Design and Improvement Options for the Corridor**

The meeting was used to share and seek comments on a corridor vision with associated goals and conceptual improvement options and strategies under initial consideration for the corridor. CAC members were also updated on the current status of work for the Transportation Plan and Corridor Study and general comments were heard from CAC members on items of interest to both these projects.

## Meeting Summary

Dan Norderud began the meeting with remarks about the status of the Whitefish Transportation Plan. He noted that a public meeting to present the Draft Whitefish Transportation Plan was held in January and numerous oral and written comments were received on the document.

The Draft Plan was also the subject of reviews by Planning Department staff from the City of Whitefish and the Whitefish City-County Planning Board during February and March. Both entities provided written comments on the Draft Transportation Plan. Most notably, these reviews asked that the Transportation Plan not be finalized until recommendations from the Corridor Study have had a chance to be discussed and incorporated into the Plan. The original intent of the project had been to finalize the Transportation Plan and complete the Corridor Study shortly afterwards. Dan stated that both projects will be completed on a more parallel track with a revised version of the Transportation Plan being issued at or near the same time as the Corridor Study.

Dan added that draft responses to all written comments on the Draft Transportation Plan are nearly complete and will soon be submitted to MDT and the City for review. The comments and responses will be included as an Appendix in the Transportation Plan.

Dan said that considerable work has been performed for the Corridor Study including the completion of an Environmental Scan and a series of Technical Memorandums that will support chapters in the study document. He also indicated the evaluation and screening process for design and improvement options is underway and the results of this evaluation will be presented in a future Technical Memo.

Dan noted that considerable work for the Corridor Study will occur this fall with a goal of substantially completing work on the Transportation Plan and Corridor Study by the end of the 2008.

## Summary of the Technical Memos

Dan then briefly reviewed key information from each of the five Technical Memos previously provided to CAC members. He explained that the memos "mirror" chapters that will be in the Corridor Study document. Further, he noted that these memos have been subject to previous reviews and comments by staff from the Montana Department of Transportation (MDT) and Federal Highway Administration (FHWA).

Comments were encouraged at any time during the review of the Technical Memos. Key discussion and comments about individual memos are highlighted below.

***Analysis of the Existing Corridor Transportation System***

The Memo discusses the characteristics of the existing road and street network in the corridor, its operation (Level of Service) and its safety performance. The memo also describes other available transportation modes and facilities including non-motorized facilities. Dan highlighted the dual functions of US 93—an arterial roadway serving both state and regional transportation needs and local traffic. He highlighted traffic growth trends (based on historical Average Annual Daily Traffic counts on US 93), briefly discussed traffic characteristics (daily, seasonal, and truck composition), and described locations on the corridor with capacity concerns and undesirable levels of service. Trends based on an analysis of motor vehicle crashes in the corridor during a recent 3-year period were described.

**Comments from CAC Members:** **Karin Hilding** commented that the shuttle service between Whitefish and Kalispell offered this past winter by Eagle Transit operated on a schedule that was not particularly favorable for Whitefish residents. Dan asked if CAC members knew if any decisions had been made yet regarding continued shuttle transit service for Whitefish. Karin mentioned that Eagle Transit was still investigating this and was seeking some financial support from the City.

In comments after the meeting, **Gary Stephens** highlighted several locations in the memos where information presented needed to be corrected. Text in need of corrections is highlighted below:

*Page 2 (1st Sentence of Last paragraph)* – The sentence should be revised as follows:

> **From south of the Montana Highway 40 intersection** and extending to 13th Street, US 93 transitions from a **five-lane rural** highway **with a painted center median/two-way left turn lane** to a five-lane urban roadway **consisting of** two travel lanes in each direction and a center two-way left turn lane. The section…

*Page 9 (Last Sentence in the paragraph describing Baker Avenue)* – The sentence should be revised as follows:

> …turn lane. The north approach to the Baker Avenue and 2nd Street intersection has been configured with a 12-foot wide **through-right** lane for southbound traffic, **a 12-foot wide left turn lane for southbound traffic, and a 12-foot wide** through lane for northbound traffic. **A 7.4-foot wide shoulder marked to prohibit parking exists along the west side**

**of the street on the north approach and a 9-foot wide parking lane exists along the east side of the street.**

***Current/Planned Land Uses, Community Characteristics, and Environmental Setting***

The Memo examines current and planned land uses within central Whitefish, presents key demographic and socio-economic characteristics of the Whitefish community, and environmental considerations that could potentially influence the location or design of US 93 through the City of Whitefish. Dan noted that two planning documents—the Whitefish City-County Growth Policy and Downtown Business District Master Plan— address land uses in the corridor study area and that the Business District Master Plan has been adopted as part of the Growth Policy. Dan highlighted community growth trends and current and future populations for the City and Whitefish area. Dan also acknowledged several environmental conditions (the Whitefish River and associated wetlands, historic properties, and some hazardous materials concerns) that must be considered during project development and design activities for US 93. He also mentioned that the improvements to US 93 will be subject to the City's newly adopted Critical Areas Ordinance.

**Comments from CAC Members:** In comments after the meeting, **Gary Stephens** asked about the significance of the corridor study area boundary shown in Figure 1 of the memo since community wide travel patterns influence the amount and distribution of traffic on US 93. Dan indicated the study area boundary provides a general area of interest for the discussion of land uses and environmental conditions.

**Karin Hilding** pointed out the City may face additional Montana Pollutant Discharge Elimination System (MPDES) discharge permit requirements when the community exceeds 10,000 residents.

***Analysis of Future Traffic Conditions on US 93 through Whitefish***

The Memo looks at the future traffic conditions and operations of the US 93 corridor in Whitefish expected to occur in the year 2030. This analysis establishes a "baseline" of future conditions which can then be used to help evaluate potential design and improvement options in the US 93 corridor. The future conditions are based on assumptions of future employment and housing within the community and travel demand modeling developed as part of the Whitefish Transportation Plan.

Dan noted that the most apparent future deficiencies on the US 93 corridor will be:

- the poor operation of unsignalized intersections on Spokane Avenue caused by excessive side street vehicle delays;
- deteriorating LOS at the signalized intersections of Spokane Avenue and 13th Street and 2nd Street and Baker Avenue; and
- the continued inability for the intersection of 2nd Street and Baker Avenue to completely accommodate trucks.

He stated the analyses suggest significant increases in delay and resulting decreases in Level of Service (LOS) are anticipated along Spokane and Baker Avenues in peak hours by the year 2030.

**Comments from CAC Members:** No comments were offered specific to the content of this memo. **Shane Stack** asked if RPA optimized signal timing in our analysis of future conditions. Scott Randall responded that the analyses were done with and without optimizing signal timings.

**Karin Hilding** stated that there are obvious problems at signalized intersections on 2nd Street and she wondered what data was necessary and if any of the data can be collected in advance to help facilitate signal improvements sooner than later. The data typically needed for a signal analysis include intersection geometrics (i.e., lane configurations, lane widths, parking lanes) and turning movement counts during peak hours. Dan explained that much of this information exists and that turning movement counts have been conducted at various times during previous years at key signalized intersections.

**John Wilson** followed Karin's comments with a question about how soon a project could be developed to improve the signals and wondered if MDT could develop a separate project to undertake signal upgrades? **Shane** responded by stating that it may be possible to do a separate signal project and that a project addressing the three signals on 2nd Street could be accomplished in a relatively short timeframe (maybe a year) assuming there is no need for right-of-way acquisition. However, he noted that if NH (National Highway) System funds are very tight and MDT does not readily have the funding at this time for such a project. John suggested the Corridor Study (or Transportation Plan) discuss the process for undertaking an interim signal project on 2nd Street.

***Corridor Issues, Corridor Vision & Goals, and Statement of Purpose & Need***

The Memo highlights issues associated with the US Highway 93 corridor, reiterates past community input on corridor issues and needs from previous planning efforts and projects, and presents a corridor vision with goals to help identify and evaluate infrastructure improvement options for the corridor. He noted the goals and objectives for achieving the goals will form the basis for screening criteria used to help evaluate design and improvement options. Dan highlighted the following fundamental corridor needs based on previous input from community planning efforts and MDT's design projects:

- Need to Enhance Capacity and Improve Operational Efficiency
- Need to Improve Flow of Large Trucks in Corridor
- Need to Address Geometric and Design Deficiencies
- Need to Upgrade US 93 Infrastructure
- Need to Enhance Safety for Facility Users

He also noted that corridor improvements need to consider local land use plans and the City's Bicycle and Pedestrian Master Plan; need to be conscious of environment and community character; and need to be feasible to implement.

**Comments from CAC Members:** In comments after the meeting, **Gary Stephens** highlighted a statement in the second bullet item under the "Safety" heading on page 2 of the memo that indicated crash rates were substantially higher than statewide averages for other urban areas. He indicated this contradicted a statement we made in the *Analysis of the Existing Corridor Transportation System* memo that says crash rates for a recent 3-year period are not considered high. A review of the

referenced bullet item showed the statement made on page 2 of the memo is correct based on the data presented in Figure 1-9 of the FEIS.

***Preliminary Conceptual Design and Improvement Options for the Corridor***

The Memo outlines the design and improvement options under initial consideration for the US 93 corridor through Whitefish. Dan explained the designs and options identified in the memo will be subject to a screening process to ultimately help determine which ones merit further detailed study. The conceptual design and improvement options for the corridor generally consist of:

- All alternatives for the Whitefish urban area described in the US Highway 93 Somers to Whitefish Final Environmental Impact Statement (FEIS);
- Design options developed after the Record of Decision (ROD) on the FEIS as part of project development activities for the MDT's Whitefish Urban project;
- Recommendations from the Whitefish Downtown Business District Master Plan; and
- Other strategies that may potentially help relieve congestion and reduce future travel demands on the US 93 corridor.

Dan referenced a handout showing design configurations (build alternatives) considered in the Somers-Whitefish FEIS and four configurations developed after the ROD. He pointed out these options generally represent the most obvious ways to accommodate traffic flows within the corridor—two directional or one-way travel, couplet configurations using all or portions of Spokane and Baker Avenues, using 2, 3 or 4 lanes to accommodate traffic, and providing east west links between Spokane and Baker Avenues. He noted that without going substantially beyond this project area, no new or "previously undiscovered" design configurations are proposed for the corridor.

Dan also briefly discussed the potential indirect benefits to the corridor that may result from locally implemented "off-system improvements and several options or strategies not applicable to the corridor.

**Comments from CAC Members:** **George Gardner** commented that some of the options do not include portion of Baker Avenue south of 7th Street. He noted that the character of Baker Avenue will change notably (some of these changes are evident already) with corridor improvements making use of the street. In general discussion, it was noted that right-of-way is limited along portions of Baker Avenue and right-of-way acquisition may be difficult. **Karin** pointed out that during previous City improvement projects on Baker considerable time and effort was spent acquiring needed right-of-way.

This discussion expanded to include potential right-of-way issues on Spokane Avenue. Some of the design configurations could require new right-of-way along the street and could potentially impact boulevards along the roadway.

**Don Spivey** commented about the need for a safe pedestrian/bicyclist crossing of Spokane Avenue where the street crosses the Whitefish River north of 13th Street. He noted that the City's Bicycle and Pedestrian Committee has requested that the culverts be replaced with a new bridge and provisions included that allow for a grade separated crossing of US 93 and for crossing from the east

to the west side of the river as the city's river corridor path is on the west side from that location down to the playing fields near Highway 40. He also pointed out that this had been discussed at a Citizens Working Group meeting in September 2005 and there appeared to be general agreement from MDT about including this design feature. Dan noted that he was aware that replacing the culverts with a bridge was part of the FEIS Preferred Alternative but dropped out of the Record of Decision due to cost reasons.

**Don Spivey** suggested that it be made clear at the public meeting that a design configuration has not been selected and the options presented in the handout are all under consideration.

## Other General Comments and Discussion

**Karin Hilding** commented about the potential benefits that might be realized if park-and-ride lots were paired with low cost bicycle rental service. She felt this could be a way to encourage summer peak season visitors to use alternate transportation modes and could help reduce the numbers of vehicles on the US 93 corridor.

**Mary Jo Look** asked why a bypass cannot be considered for Whitefish? She believes a bypass from Highway 40 and to US 93 west of Whitefish will greatly benefit the community and would receive much use by traffic wishing to pass through town. Shane pointed out that a bypass can be considered and has been examined in the Transportation Plan. Travel demand modeling suggests a bypass would likely see use; however, significant traffic volumes would still be present on the US 93 corridor and improvements would still be needed. The time required to identify and develop a potential bypass route, the associated high costs of right-of-way and construction, environmental concerns, and the potential for local opposition to a bypass were mentioned as other considerations for implementing a bypass in the community. Shane noted that if a bypass were developed to "replace" US 93 through Whitefish, there would be a potential to lose federal funding for Spokane Avenue and 2nd Street.

There was a general discussion about an enhancement to Karrow Avenue and whether the Whitefish-West project includes left turn provisions at the Karrow intersection.

**Monte Gilman** noted that he believes the projects recommended in the Transportation Plan will provide a solution to many of Whitefish's congestion problems. He supported the increased connectivity which is a basic philosophy of the Plan.

**Mary Person** commented that in her opinion, many of the community's transportation problems can be addressed through upgrades and more efficient use of existing facilities.

**Dave Taylor** asked when a revised version of the Transportation Plan might be available. Dan explained that the document should be available at the same time or shortly after the release of the Draft Corridor Study.

There was a general discussion of the newly completed bicycle and pedestrian path along Wisconsin Avenue. Issues discussed included the need for some minor signing revisions, the community's use

of the new path, and the conflicts caused by path users crossing in the vicinity of the Whitefish Lake Lodge.

In comments after the meeting, **Gary Stephens** expressed his opinion that the planning horizon for the Corridor Plan should really be 2050 since it is unlikely that improvements to US 93 through Whitefish would be completed given the current funding situation. Gary's concerns were acknowledged and it was pointed out that using such a horizon year would require making uncertain assumptions about future growth and employment in Whitefish.

**The meeting concluded around 6:10 p.m.**

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# Whitefish Transportation Plan
# Urban Corridor Study of US 93
# Resource Agency Workshop Meeting Summary

## Introduction

A Resource Agency Workshop was held on Thursday, May 24th in Conference Room A at MDT's Rail, Transit, and Planning Office at 2550 Prospect Avenue in Helena. The meeting took place between 1:30 to 3:00 p.m. and was attended by the following persons:

| | |
|---|---|
| Sheila Ludlow | MDT Statewide and Urban Planning Section (Helena) |
| Jean Riley | MDT Statewide and Urban Planning Section (Helena) |
| Carl James | Federal Highway Administration |
| Bob Burkhardt | Federal Highway Administration |
| Steve Potts | U.S. Environmental Protection Agency (EPA) |
| Jeff Key | Robert Peccia & Associates (RPA - Helena) |
| Dan Norderud | Robert Peccia & Associates (RPA - Helena) |
| Scott Randall | Robert Peccia & Associates (RPA - Helena) |

**Other Agency Representatives Invited**

| | |
|---|---|
| Scott Jackson | U.S. Fish and Wildlife Service (USFWS) |
| Allan Stienle | U.S. Army Corps of Engineers (COE) |
| Jeff Ryan | Montana Department of Environmental Quality (DEQ) |
| Robert Ray | Montana Department of Environmental Quality (DEQ) |
| Julie Dalsaglio | U.S. Environmental Protection Agency (EPA) |
| Jim Satterfield | Montana Department of Fish, Wildlife & Parks (FWP) |
| Glenn Phillips | Montana Department of Fish, Wildlife & Parks (FWP) |
| Steve Knapp | Montana Department of Fish, Wildlife & Parks (FWP) |
| Mark Baumler | Montana State Historic Preservation Office (SHPO) |

In an effort to provide project information to invited agency representatives who did not attend the workshop, the PowerPoint presentation used for the workshop, and these meeting minutes, have been posted on the project website (http://www.mdt.mt.gov/pubinvolve/whitefish/) under the "*Documents/Newsletters*" link.

All invited agency representatives were provided with an agenda and other project information prior to the workshop to support and foster discussion during the meeting.

# Workshop Purpose

The purposes of this workshop were to: 1) introduce the Consultant Team to agency representatives; 2) provide an overview of the community-wide Transportation Plan and US 93 Urban Corridor Study projects; 3) compare and contrast the corridor planning and NEPA processes; 4) discuss existing conditions within the US 93 corridor and identify known corridor resource issues and concerns; and 5) solicit input from agency representatives on environmental resources along and affected by the highway corridor through Whitefish and possible regulatory concerns.

# Workshop Summary

## Overview of the Whitefish Projects

Jeff Key began the workshop by providing an overview of the Transportation Plan and Urban Corridor Study projects. He noted there are two (2) distinct projects underway in Whitefish—the Whitefish Transportation Plan and an Urban Corridor Study focused on US 93 within the City. The projects are cooperative efforts funded by MDT and the City of Whitefish that should be completed near the end of 2007.

Mr. Key explained that no comprehensive Transportation Study has been undertaken to date within the City and surrounding area and the time is right for such a study due to the land use changes and growth occurring in the community. The Transportation Plan will inventory and analyze the existing transportation system; forecast future development patterns and travel demands; and evaluate the forecasts to determine needed transportation improvements in the study area.

He stated that design work for MDT's "Whitefish Urban" and "Whitefish West" projects on US 93 began in 2005. These projects were developed based on the Preferred Alternative for US 93 outlined in the US Highway 93–Somers to Whitefish Final Environmental Impact Statement (FEIS) and Record of Decision (ROD). As part of the work for these projects, a Re-Evaluation of the findings and conclusions in the FEIS/ROD as they relate to the Whitefish Urban and Whitefish West project areas is underway. The preliminary results of this effort suggest unanticipated growth has changed traffic volumes and travel patterns within the community. Traffic analysis work also showed the Preferred Alternative for the Whitefish Urban project would not function as indicated in the FEIS/ROD. As a result, MDT and FHWA determined that additional studies and analyses of feasible alternatives are needed for US 93 through Whitefish and resulted in a decision to do a corridor study to take a fresh look at options for the US 93 corridor through Whitefish.

Mr. Key stressed that the Corridor Study will be developed within the context of and concurrent with the Whitefish Transportation Plan. This approach allows for a focused look at US 93 through Whitefish based on the consideration of existing and planned land use changes and a detailed evaluation of community-wide transportation needs and desires. He emphasized that these new planning efforts will be sensitive to prior community input and projects like: previous "subarea" transportation studies; the Somers to Whitefish FEIS/ROD; the recently adopted Downtown Business District Master Plan; and the community's current Growth Policy Update project.

The Corridor Study is not being completed in conjunction with a NEPA document but it will be developed and documented in a manner consistent with NEPA. Recommendations and appropriate supporting information from the Corridor Study will be forwarded into a future NEPA process.

## Corridor Planning and NEPA

Dan Norderud presented a series of PowerPoint slides that discussed Corridor Planning and how it relates to the NEPA process. The discussion identified elements of corridor studies and the potential benefits offered by undertaking corridor planning: reducing the cost of the environmental review process; speeding up project delivery time; and providing for early and ongoing involvement of agencies and the public. Mr. Norderud compared and contrasted Corridor Planning and the NEPA process and discussed how corridor planning can be used to "inform" the NEPA process through the identification of issues and system deficiencies, the development and screening of alternatives, and impact analyses. He explained that both processes have similar goals:

- Make decisions in the best overall interest of the community through a collaborative process; and
- Bring environmental considerations into agency planning and action.

## Roles and Responsibilities and Public Involvement Activities

Jeff Key identified all parties involved in the projects and remarked that the City of Whitefish appears to be very engaged in the Transportation Plan and Corridor Study. The Consultant Team is working with a Project Oversight Committee composed of members from MDT, FHWA, and the City of Whitefish. Conference calls among members of the committee are held every other week. A Citizens Advisory Committee composed of various stakeholders in Whitefish has also been formed as a sounding board for the projects.

Public involvement activities planned for the projects include four meetings with the Citizens Advisory Committee, four public information meetings, a presentation and a formal hearing for the Transportation Plan before the Whitefish City Council, and informal community meetings. The first public informational meeting and meetings with the Citizens Advisory Committee and the City Council were held in mid-April.

Mr. Key explained that various public outreach efforts are underway and planned including project newsletters (with distribution to over 5,000 community residents), an online travel preference survey, and a project website.

## Existing Conditions Summary

Mr. Key then presented an overview of the US 93 corridor and conditions within the community that have changed since the time of the Somers to Whitefish FEIS/ROD. He provided information about the functional classification of US 93, lane configurations and traffic controls, estimated traffic volumes, and land uses within the US 93 corridor. It was pointed out that large commercial motor vehicles accounted for 8-13% of traffic within the corridor at time of the Final EIS and that traffic

analyses have generally verified that the percentage of large trucks in the traffic stream remains an issue.

Mr. Key then identified notable changed conditions within the community and US 93 corridor including information documenting the notable growth, development, and land use changes within the Whitefish area. The information illustrated rapid growth rates and pointed out that migration of out-of-state residents into the area is a significant factor in this growth. Mr. Key advised the group that the City's new Growth Policy assumes controlled growth would occur within the community and forecasted the addition of about 2,400 new dwelling units over the next 12 years (the planning horizon for the Growth Policy). He also highlighted key objectives of the Downtown Business Master Plan and described recommendations of the plan that could influence the design of the US 93 corridor.

Mr. Key concluded by indicating that issues like livability issues and managing growth, alternate transportation modes (particularly pedestrian and bicycle facilities), aesthetics, environmental protection, and preserving the community's character and "small town" feel are highly important to Whitefish residents based on comments heard to date and previous planning efforts.

Dan Norderud then presented information about environmental resources present within the US 93 corridor including: air quality; surface waters/water quality/floodplains; threatened and endangered species; wetlands; general wildlife and fisheries; cultural resources; and hazardous materials. An aerial photo overlain with information about floodplains, wetlands, cultural resource sites, and hazardous materials sites was presented. The information presented was compiled from: previous resource documents prepared for the Somers to Whitefish FEIS; studies conducted in 2005 and 2006 that updated resource information for the Whitefish Urban and Whitefish West project areas; and new information generated for an environmental scan associated with the corridor study. Mr. Norderud explained that the environmental scan will be used to help identify fatal flaws, differences in potential impacts, and procedural requirements associated with alternatives considered for US 93.

## Next Steps

Mr. Key concluded the workshop presentation by summarizing work in progress and briefly outlining upcoming activities for the projects. He indicated that only one agency workshop has been planned but agencies will be kept apprised of progress on the projects.

## Comments/Discussion

Jeff Key indicated during his presentation that there are some differences regarding the City's managed growth scenario for the community and growth assumptions made for traffic analyses done for the Whitefish Urban project. Bob Burkhardt of FHWA asked if it would be misleading to present two differing growth scenarios in the traffic modeling for the transportation plan. Jeff responded that a decision regarding the most appropriate growth scenario has not yet been made; however, he felt that the scenario representing the worst case for traffic should be used to help identify necessary system improvements.

Steve Potts indicated that based on the materials presented at the workshop, he believed the issues of interest to EPA are known and will be addressed in the corridor planning effort.

There was general discussion among the group about PM-2.5 non-attainment areas since monitoring has shown particulate levels in Whitefish over the 2002-2005 period approached the recently revised 24-hr average standard for PM-2.5. Steve Potts indicated Libby was the only PM-2.5 non-attainment area in Montana and identified Betsy Wahl as an EPA staff member that can provide further information about PM-2.5 non-attainment status.

The group also discussed how recommendations from the corridor study may be incorporated into NEPA documents and that corridor planning may help identify less costly and phased approaches to resolving transportation issues. This may enable some projects to be more easily advanced through the environmental review process.

Jean Riley also suggested that agencies be provided with advance copies of the corridor study. This would keep agencies up to date on the direction of the project and could help identify notable issues or concerns early in the process.

Jean Riley also asked about if the City's proposed Growth Policy could push growth outside Whitefish's jurisdictional area. Jeff Key indicated that the Growth Policy has not yet been adopted and some resistance to a limited growth idea has been heard. He pointed out that if growth shifts beyond the jurisdictional area, the effect may not be too significant on US 93 since residents still have to use the roadway for travel within and through the community.

## Follow-Up Actions

Scott Jackson of the USFWS was unable to attend the workshop due to prior commitments. Scott requested a meeting to be set on a different date to discuss the Whitefish projects and obtain input on potential Threatened/Endangered species issues. MDT will contact Scott and set up a meeting.

**The workshop concluded at 3:00 p.m.**

# Whitefish Transportation Plan
# Urban Corridor Study of US 93
# May 30, 2007 Coordination Meeting with the USFWS

A meeting with Scott Jackson of the U.S. Fish and Wildlife Service (USFWS) was held on Wednesday, May 30th in Conference Room B at MDT's Rail, Transit, and Planning Office at 2550 Prospect Avenue in Helena. The meeting was arranged because Scott Jackson was unable to attend the Resource Agency Workshop held on May 24, 2007. Scott was provided with a copy of the slides from the PowerPoint presentation made at the Agency Workshop.

The meeting took place from 8:30 to 10:00 a.m. and was attended by the following persons:

| | |
|---|---|
| Sheila Ludlow | MDT Statewide and Urban Planning Section (Helena) |
| Jean Riley | MDT Statewide and Urban Planning Section (Helena) |
| Dan Norderud | Robert Peccia & Associates (RPA - Helena) |

The purposes of this meeting were to provide an overview of the community-wide Transportation Plan and US 93 Urban Corridor Study projects and solicit input from the USFWS on environmental resources along and affected by the highway corridor through Whitefish and possible regulatory concerns.

## Meeting Summary

Dan Norderud began with a brief overview of the Whitefish Transportation Plan and Corridor Study. He summarized MDT's efforts to develop the "Whitefish Urban" and "Whitefish West" projects—developed based on the Preferred Alternative identified in the US Highway 93–Somers to Whitefish Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) completed in 1994. Dan pointed out that work done for these projects, suggests unanticipated growth has changed traffic volumes and travel patterns within the community. Traffic analysis work also showed the Preferred Alternative (a one-way couplet design) for the Whitefish Urban project would not function as indicated in the FEIS/ROD.

Mr. Norderud indicated MDT and FHWA determined that additional studies and analyses of feasible alternatives for US 93 through Whitefish were needed. MDT and the City of Whitefish agreed to prepare a community-wide Transportation Plan and review design options for US 93 in Whitefish. This approach will allow for a focused look at the US 93 corridor considering existing land uses and planned land use changes; community-wide transportation needs and desires; and local planning efforts like the recently adopted Downtown Business District Master Plan and the ongoing Growth Policy Update project. Dan stated that recommendations and appropriate supporting information from the Corridor Study will be forwarded into a future NEPA process.

The discussion then focused on threatened and endangered species. Scott related that the following endangered, threatened, proposed, and candidate species are listed for Flathead County:

- Canada lynx – Listed Threatened with Designated Critical Habitat
- Gray wolf – Listed Endangered
- Grizzly bear – Listed Threatened
- Bald eagle – Listed Threatened
- Bull trout – Listed Threatened with Designated Critical Habitat
- Spalding's Campion – Listed Threatened

Habitat availability, species distribution, the potential impacts associated with improving US Highway 93, and measures to minimize impacts to potentially affected species were discussed among those attending the meeting. These discussions are summarized below.

**Bull Trout.** Scott stated that Whitefish Lake and tributaries above the lake have been designated as critical habitat for bull trout. The Whitefish River, which flows southeasterly from Whitefish Lake to join the Stillwater River, is within bull trout range but does not provide high quality habitat for the species. He pointed out that water quality and temperature are the principal reasons for the habitat limitations in the river.

Scott indicated that he had previously discussed the reconstruction of US 93 through with biological resources consultants assisting with the Whitefish Urban and Whitefish West projects. He was aware of the need to cross the Whitefish River at several locations. Jean Riley pointed out that the Preferred Alternative in the FEIS/ROD called for a new bridge across the river at 7th Street linking Spokane and Baker Avenues. Scott noted that USFWS has not had to consider many "new" bridges across bull trout waters in recent years. He said building a new bridge presents a concern but would not be a "deal stopper" given the quality of habitat being crossed in Whitefish.

Scott recommended that design efforts should attempt to minimize impacts and encroachment on the Whitefish River through measures like minimizing the number of piers and adequately accommodating flood flows. He also wondered if consideration could be given to replacing the existing culverts with a bridge where Spokane Avenue crosses the river in the southern portion of the corridor. Dan mentioned that a bridge on Spokane Avenue at the identified crossing was being discussed for the Whitefish Urban project. He also said the community had an interest in developing a pedestrian/bicycle trail along the river and some type of crossing under the highway would be desirable at this location.

**Bald Eagles.** Scott indicated that bald eagles could potentially be found foraging along the Whitefish River. He was not aware of any bald eagle nests in the immediate Whitefish area and that information on nesting can be obtained through a request to the Natural Heritage Program. Scott said that bald eagles are becoming more frequent in urban areas and there are some instances of bald eagle nests being established in urban areas. Limitations on construction activities could be possible if a nest were In general, Scott felt that the same type of minimization measures discussed for bull trout would generally benefit foraging eagles and other aquatic species.

**Grizzly Bears.** Scott provided a map showing the boundaries of the Northern Continental Divide Ecosystem and the distribution of grizzly bears in 2002. The species distribution map showed that grizzly bears could occur in Whitefish. He felt there are no notable issues related to grizzly bears if US 93 improvements occur along the existing urban corridor. There could be some concern if work for the Transportation Plan and Corridor Study suggest the development of a new bypass route through a more rural area of the community. The principal issue related for grizzly bears for the area was ensuring "good housekeeping" practices and sanitation during construction.

**Canada Lynx and Gray Wolf.** Scott does not there are any issues associated with these species within the US 93 Corridor or the remainder of the study area for the Transportation Plan. The nearest critical habitat for Canada lynx is in Glacier National Park.

**Spalding's Campion.** Scott indicated the project does not pose a concern for this threatened plant species since suitable habitat for the species does not occur in the immediate Whitefish area.

## Follow-Up Actions

Jean Riley suggested that RPA contact Montana FWP staff in the Whitefish area for their input on wildlife/fisheries resources and relevant issues. RPA will contact Tim Their, Mark Delaray, and Tim Manley and document their comments.

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# APPENDIX B:
# Transportation Planning Requirements and Their Relationship to National Environmental Policy Act (NEPA) Approvals

U.S. Department of Transportation
**Federal Highway Administration**

**Montana Division**

585 Shepard Way
Helena, MT 59601

July 17, 2008

In Reply Refer To:
HDA-MT

Jim Lynch, Director
Montana Department of Transportation
2701 Prospect Avenue
Helena, MT 59620

Subject: Transportation Planning Requirements and Their Relationship to National Environmental Policy Act (NEPA) Approvals

Dear Mr. Lynch:

Enclosed is guidance on the relationship between planning requirements and NEPA approvals, issued on January 28, 2008, by FHWA. This guidance, originally transmitted electronically, has generated extensive conversations between MDT and our office. We have spent considerable time reaching agreement with your staff on the following procedures to implement this guidance, both in rural/non-Metropolitan Planning Organization (MPO) areas and within the three MPO areas.

## I. Rural/non-MPO Area Projects

Regionally Significant Projects in Rural Areas

23 CFR §450.104 defines: "*Regionally significant project* means a transportation project … that is on a facility which serves regional transportation needs … and would normally be included in the modeling of the metropolitan area's transportation network. At a minimum, this includes all principal arterial highways and all fixed guideway transit facilities that offer a significant alternative to regional highway travel."

In Montana's rural areas, outside MPO planning boundaries, regionally significant projects will include all projects on principal arterial highways that add potential capacity or significantly change the highway's operational characteristics. Examples of these are projects that:

- introduce new and independent roadway alignment for a substantial proportion of the project while not obliterating the existing roadway;
- add thru–lanes for a substantial portion of the project, exclusive of truck climbing lanes; or
- introduce a new interchange.

Examples of projects in rural areas that would not meet the regionally significant definition are:

- pavement preservation projects;
- minor/major rehabilitation;

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- reconstruction projects generally on or paralleling existing alignment that only bring a facility up to current standards without adding lanes (i.e., two-lane highway with a 28' top changing to a two-lane highway with a 40' top, generally following existing alignment);
- safety projects; and
- new or revised intersection control or configuration.

The majority of projects in rural Montana will not be considered regionally significant, and hence, the January 28, 2008, guidance will not change the MDT/FHWA procedures.

Non-Regionally Significant Projects

The current Statewide Transportation Improvement Program (STIP) will describe the Preliminary Engineering (PE) project and show funds necessary for full PE from nomination through Plans, Specifications & Estimate (PS&E). The original Federal-aid project will be authorized based on this STIP and full amount obligated for PE through PS&E. The NEPA document will typically be a Categorical Exclusion (CE) but may occasionally be an Environmental Assessment (EA). There will be no further action needed at time of CE or final NEPA decision document approval.

Regionally Significant Projects:

**Option 1:** The STIP will describe the PE project and show funds necessary for full PE from nomination through PS&E. The original Federal-aid project will be authorized based on this STIP and the full amount obligated for PE through PS&E for the entire corridor. The NEPA document may be a CE, an EA or Environmental Impact Statement (EIS) depending upon significance of potential impacts. A funding plan will be developed for the project either in a pre-NEPA planning process or in conjunction with the NEPA process. In either case the environmental document will disclose the project funding and phasing. Prior to approving the final NEPA decision document, [i.e., CE, Finding of No Significant Impact (FONSI) or Record of Decision (ROD)], the next phase (Right-of-Way, Incidental Construction, or Construction) for the corridor or a portion of the corridor with operational independence* and meeting the project Purpose and Need, will be included in the current STIP for informational purposes.

**Option 2:** The STIP will describe the PE project and show funds necessary for PE from nomination through the NEPA decision document. The original Federal-aid project will be authorized based on this STIP and full amount obligated for PE through NEPA document/Scope of Work Report for the entire corridor. The NEPA document may be a CE, an EA or EIS depending upon significance of potential impacts. A funding plan will be developed for the project either in a pre-NEPA planning process or in conjunction with the NEPA process. In either case the environmental document will disclose the project funding and phasing. Prior to approving the final NEPA decision document (i.e., CE, FONSI or ROD) the next phase (final design, ROW, Incidental Construction, or Construction) for a portion of the corridor with operational independence* and meeting the project Purpose and Need, will be included in the fiscally-constrained current STIP as a new Federal-aid project or a program modification to the original Federal-aid project.

## II. MPO Area Projects

The process for projects in MPO areas shall be similar to Option 1 or 2 above for regionally significant projects. The differences are primarily related to fiscal constraint requirements in MPO areas. The PE project shall come from an approved, fiscally-constrained Metropolitan Transportation Plan (MTP) and STIP before authorization. The NEPA document will disclose the project funding and phasing. Prior to signing the NEPA decision document, the entire project must be in the MTP and one subsequent phase must be in the current TIP. If only a segment of a project is planned within the MTP, the NEPA document may cover the entire project but the NEPA decision document will only cover the planned segment. The planned segment must be operationally independent* and meet the project Purpose and Need, must be included in the fiscally-constrained MTP, and at least one subsequent phase must be in the current TIP.

**What is an operationally independent phase of work?*

> *An operationally independent phase of work is a portion of the work described in the environmental document that can be built and function as a viable transportation facility even if the rest of the work described in the environmental document is never built. Environmental commitments associated with the phase of work to be built must be implemented as part of the project. Multiple contracts developed for bidding by the Owner for contract administration purposes or due to funding shortfalls are generally not considered to be operationally independent.*
>
> *On a case-by-case basis, the scope of work described by the ROD, FONSI or CE can be divided into multiple projects that correspond to operationally independent phases of work which will be built non-concurrently. The FHWA Division Office in cooperation with MDT will make this determination.*

Also enclosed is a list of regionally significant projects that are currently being developed that do not have the NEPA document approved as of July 2008.

We appreciate the time and effort that has gone into developing these procedures. Please let us know if you have any questions.

Sincerely,

Kevin L. McLaury, P.E.
Division Administrator

Enclosure

cc: Sandy Straehl, MDT Planning Division Administrator (w/enclosures)
Loran Frazier, MDT Engineering Division Administrator (w/enclosures)

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# APPENDIX C:
# Screening Considerations Used for Assessments of Corridor Design Options

# APPENDIX C: SCREENING CONSIDERATIONS USED FOR ASSESSMENTS OF CORRIDOR DESIGN OPTIONS

| CAPACITY CONSIDERATIONS | | | |
|---|---|---|---|
| GOAL | OBJECTIVES | First Level Screening Criteria | Second Level Screening Criteria |
| *Preserve the role of US 93 as regional transportation route while recognizing the need for the portion of US 93 within the corridor to adequately function as an urban principal arterial.* | Provide adequate connectivity to the regional and local transportation network. | Does the option provide new and desirable connections to local street network? | Trip length and travel time. Provides new and desirable connections to local street network. |
| | Provide adequate capacity and an acceptable Level of Service (LOS C or higher) in the year 2030 or beyond. | V/C, LOS, average travel time and delay, other measures of effectiveness | V/C, LOS, average travel time and delay, other measures of effectiveness |
| | Minimize congestion and delays for vehicles at intersections. | Does the option have potential to reduce congestion and delay for facility users? | V/C ratios, LOS, and travel time and delay. Changes in traffic volumes, VMT, and vehicle hours of travel. |
| | Provide a design that manages truck traffic through the community in a safe and efficient manner and accommodates large vehicle movements at key intersections. | Would the option change the manner in which trucks are accommodated on US 93? | Would the option improve traffic flows for trucks through the City? Would key intersections be designed to better accommodate truck traffic and turning movements? |
| | Reduce the number of driveway access points existing along the corridor where possible. | Could the option reduce the number of driveway intersections along corridor? | Number of driveway access points combined or eliminated in corridor. |
| | Accommodate multimodal transportation opportunities within the corridor. | Would the option potentially support increased multimodal transportation facilities? | Would the option potentially support increased multimodal transportation facilities? |

| SAFETY CONSIDERATIONS | | | |
|---|---|---|---|
| GOAL | OBJECTIVES | First Level Screening Criteria | Second Level Screening Criteria |
| *Design improvements that provide a safe roadway and transportation environment for facility users and those abutting the roadway.* | Provide a design that addresses identified safety and design deficiencies. | Does the option meet MDT's geometric design criteria for urban principal arterials? | Does the option meet MDT's geometric design criteria for urban principal arterials? |
| | Provide a design that addresses identified high crash locations in the corridor. | Does the option address identified common factors identified in crash analysis? | Number of locations benefited |
| | Provide a design that reduces opportunities for traffic conflicts within the corridor. | Does the option have the potential to reduce traffic conflicts? | Number of locations benefited |
| | Provide a design that manages truck traffic through the community in a safe and efficient manner. | Would the option change the manner in which trucks are accommodated on US 93? | Would the option improve traffic flows for trucks and improve overall safety? |
| | Reduce the number of driveway access points existing along the corridor where possible. | Does the option have the potential to reduce the number of driveway access points along the corridor? | Number of driveway access points combined or eliminated in corridor |
| | Provide a design that presents a safe and accessible pedestrian environment for all users regardless of age or ability. | Does the option include improvements to enhance safety for pedestrians? Does the option include improvements to enhance mobility for pedestrians? | Does the option include improvements to enhance safety for pedestrians? Does the option include improvements to enhance mobility for pedestrians? |
| | Provide roadway design treatments to accommodate bicyclists in a safe manner consistent with guidance from the City's Pedestrian and Bicycle Trails Master Plan. | Does the design option include features that enhance safety for bicyclists? | Does the design option include features that enhance safety for bicyclists? |

| CONSISTENCY WITH APPLICABLE GEOMETRIC DESIGN CRITERIA | | | |
|---|---|---|---|
| GOAL | OBJECTIVES | First Level Screening Criteria | Second Level Screening Criteria |
| *Ensure improvements are consistent with current MDT geometric design criteria for Urban Principal Arterials wherever practicable.* | Eliminate or reduce the number of existing non-standard features or other physical deficiencies associated with the facility. | Does the option meet MDT's geometric design criteria for Urban Principal Arterials? | Does the option meet MDT's geometric design criteria for Urban Principal Arterials? |

| POTENTIAL ENVIRONMENTAL EFFECTS | | | |
|---|---|---|---|
| GOAL | OBJECTIVES | First Level Screening Criteria | Second Level Screening Criteria |
| *Provide transportation solutions that minimize impacts to the natural, cultural and social environment in the corridor where practicable.* | Minimize impact to Wildlife/Fisheries Habitat. | Would wildlife or fisheries habitat be affected? | Number of streams affected. Potential acres of habitat loss. |
| | Minimize impact to Wetlands and Waters of the US. | Are wetlands or Waters of the US affected? | Estimated acres of wetlands impacted. Number of waters crossed. Estimated length of affected bank areas. |
| | Minimize impact to Floodplains. | Would FEMA-designated 100-year floodplains be crossed or encroached upon? | Estimated length of transverse or longitudinal floodplain encroachment |
| | Minimize impacts to Whitefish "critical areas." | Would City of Whitefish "critical areas" including storm water conveyances, streams, wetlands, lakes, or areas with steep slopes be affected? | Estimated acres of wetlands impacted. Affects areas with high groundwater, streams, lakes, or areas with steep slopes or geologic hazards. |
| | Ensure conformity with Air Quality standards. | Is there a potential to increase pollutant emissions? | Peak hour vehicle miles of travel/emissions |
| | Minimize potential Noise impacts to sensitive receptors. | Are noise sensitive receptors present? | Number of sensitive receptors |
| | Minimize encroachment on Hazardous Materials Sites. | Are Hazardous Materials Sites affected? | Number of sites and area impacted |
| | Minimize impact to Cultural Resources. | Are cultural resources affected? | Number of sites potentially impacted |
| | Minimize impact to Section 4(f) Resources. | Are 4(f) Resources affected? | Number of sites potentially impacted |
| | Minimize socio–economic impacts. | Would the option likely cause notable socio-economic effects?<br>Loss of on-street parking? | Number of businesses directly affected, Number of on-street parking spaces lost? |
| | Minimize Right-of-Way (ROW) impacts. | Would new right-of-way be required? | Acres of potential ROW impact; Number of potential displacements. |

| FEASIBILITY AND AFFORDABILITY | | | |
|---|---|---|---|
| GOAL | OBJECTIVES | First Level Screening Criteria | Second Level Screening Criteria |
| *Ensure corridor improvements are feasible to implement and, represent a reasonable expenditure of limited public funds.* | Ensure improvements are feasible to implement by MDT and FHWA. | Relative expense and ease of procedural requirements for MDT/FHWA to advance the option trough a future NEPA process. Does a precedent exist for similar strategies? | Would the option be less expensive or procedurally less difficult for MDT/FHWA to advance through a future NEPA process than other options? Does a precedent exist for similar strategies? Estimated Construction Cost. |
| | Ensure improvements can be constructed while maintaining traffic operations. | Could the option be constructed under traffic? | Could the option be constructed under traffic? |
| | Ensure relative construction and maintenance costs are in line with likely availability of funding. | Is the option potentially fundable by FHWA/MDT? What is the relative cost of the option? | Estimated Construction Cost, Estimated Maintenance Costs, Would construction cost be reasonable as compared to other MDT projects? |
| | Ensure improvement strategy has a reasonable degree of public and political support. | Does the option include components or design features that would likely result in agency or public opposition or generate controversy? | Compatibility with local land use and transportation plans; Citizens Advisory Committee/Public response to alternative; Strategy would not face insurmountable opposition. |

| COMPATIBILITY WITH LOCAL PLANS AND COMMUNITY IDEALS | | | |
|---|---|---|---|
| GOAL | OBJECTIVES | First Level Screening Criteria | Second Level Screening Criteria |
| *Provide transportation improvements in the corridor that are compatible with local land use and transportation plans and that are sensitive to aspects of the community valued by Whitefish's residents.* | Design transportation improvements within the corridor to consider the recommendations in local plans. | Would the option be compatible with or support recommendations from local plans? | Extent to which the option is compatible with recommendations from local plans. |
| | Accommodate pedestrians and bicyclists in a manner consistent with the City of Whitefish's Pedestrian and Bicycle Trails Master Plan. | Would the option be consistent with the City of Whitefish's Pedestrian and Bicycle Trails Master Plan? | Does the option provide desired trail connections or enhance trail components? |
| | Balance transportation improvements with the preservation of Whitefish's unique "character" and quality of life. | Would enhancements be consistent with features recommended in local plans or desired by the City of Whitefish and local residents? | Would enhancements be consistent with features recommended in local plans or desired by the City of Whitefish and local residents? |
| | Identify opportunities to enhance the continuity of the adjoining street network and improve local mobility. | Does the option provide new and desirable connections to local street network? | Degree to which the option makes new and desirable connections to the local street network |
| | Consider context sensitive solutions (CSS) to enhance the appearance of the corridor. | Does the option have the potential to enhance the appearance of the corridor? | Would enhancements be consistent with features recommended in local plans or desired by the City of Whitefish and local residents? |

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# APPENDIX D:
# Technical Materials Relevant to the Operational Review of Corridor Design Options

**Summary of Network Wide Measures of Effectiveness for Each Alternative Under Existing (2003) Conditions**

| Measure of Effectiveness | Alternatives from EIS Report | | | | | |
|---|---|---|---|---|---|---|
| | Alternative A (4-Lane) | Alternative C (Couplet 1) | Alternative C (Couplet 2) | Record of Decision Preferred | Alternative C (Couplet 4) | Alternative C (Offset) |
| Number of Intersections | 19 | 19 | 20 | 20 | 19 | 19 |
| Total Delay / Vehicle (sec/veh) | 7 | 8 | 7 | 7 | 8 | 8 |
| Total Delay (hr) | 51 | 55 | 53 | 52 | 59 | 49 |
| Stops / Vehicle | 0.28 | 0.27 | 0.27 | 0.29 | 0.33 | 0.31 |
| Total Stops | 7925 | 6914 | 7189 | 7642 | 8362 | 7142 |
| Total Travel Time (hr) | 135 | 134 | 134 | 130 | 137 | 120 |
| Distance Traveled (mi) | 2463 | 2231 | 2284 | 2270 | 2249 | 2068 |
| Fuel Consumed (gal) | 177 | 164 | 166 | 170 | 178 | 155 |
| CO Emissions (kg) | 12.4 | 11.48 | 11.61 | 11.87 | 12.41 | 10.85 |
| Unserved Vehicles (#) | 0 | 0 | 0 | 0 | 0 | 0 |
| Unsignalized Intersections at or above a LOS "C" | 8 | 6 | 10 | 11 | 6 | 10 |
| Signalized Intersections at or above a LOS "C" | 3 | 5 | 7 | 6 | 6 | 4 |
| Unsignalized Intersections at or below a LOS "D" | 7 | 8 | 3 | 3 | 7 | 4 |
| Signalized Intersections at or below a LOS "D" | 1 | 0 | 0 | 0 | 0 | 1 |

| Measure of Effectiveness | Alternatives from WGM Report | | | |
|---|---|---|---|---|
| | Modified Record of Decision | Contra-Flow | Truck Route | Downtown Master Plan |
| Number of Intersections | 20 | 20 | 20 | 20 |
| Total Delay / Vehicle (sec/veh) | 6 | 6 | 7 | 7 |
| Total Delay (hr) | 46 | 45 | 54 | 52 |
| Stops / Vehicle | 0.28 | 0.27 | 0.3 | 0.3 |
| Total Stops | 7539 | 7019 | 8332 | 8179 |
| Total Travel Time (hr) | 124 | 119 | 134 | 131 |
| Distance Traveled (mi) | 2270 | 2189 | 2347 | 2305 |
| Fuel Consumed (gal) | 165 | 159 | 179 | 174 |
| CO Emissions (kg) | 11.53 | 11.08 | 12.49 | 12.17 |
| Unserved Vehicles (#) | 0 | 0 | 0 | 0 |
| Unsignalized Intersections at or above a LOS "C" | 11 | 10 | 10 | 10 |
| Signalized Intersections at or above a LOS "C" | 6 | 6 | 5 | 6 |
| Unsignalized Intersections at or below a LOS "D" | 3 | 4 | 4 | 4 |
| Signalized Intersections at or below a LOS "D" | 0 | 0 | 1 | 0 |

**Summary of Network Wide Measures of Effectiveness for Each Alternative Under Future (2030) Conditions**

| Measure of Effectiveness | Alternatives from EIS Report | | | | | |
|---|---|---|---|---|---|---|
| | Alternative A (4-Lane) | Alternative C (Couplet 1) | Alternative C (Couplet 2) | Record of Decision Preferred | Alternative C (Couplet 4) | Alternative C (Offset) |
| Number of Intersections | 19 | 19 | 20 | 20 | 19 | 19 |
| Total Delay / Vehicle (sec/veh) | 403 | 356 | 36 | 84 | 197 | 214 |
| Total Delay (hr) | 5151 | 4098 | 400 | 984 | 1923 | 2425 |
| Stops / Vehicle | 0.46 | 0.35 | 0.37 | 0.4 | 0.41 | 0.47 |
| Total Stops | 21205 | 14487 | 15040 | 17097 | 13665 | 19168 |
| Total Travel Time (hr) | 5289 | 4229 | 522 | 1108 | 1926 | 2551 |
| Distance Traveled (mi) | 4093 | 3685 | 3476 | 3663 | 2954 | 3668 |
| Fuel Consumed (gal) | 4057 | 3223 | 506 | 962 | 1527 | 2030 |
| CO Emissions (kg) | 283.6 | 225.32 | 35.36 | 67.27 | 106.73 | 141.91 |
| Unserved Vehicles (#) | 475 | 877 | 844 | 963 | 109 | 340 |
| Unsignalized Intersections at or above a LOS "C" | 3 | 1 | 1 | 1 | 4 | 0 |
| Signalized Intersections at or above a LOS "C" | 3 | 3 | 4 | 3 | 5 | 4 |
| Unsignalized Intersections at or below a LOS "D" | 12 | 13 | 12 | 13 | 9 | 14 |
| Signalized Intersections at or below a LOS "D" | 1 | 2 | 3 | 3 | 1 | 1 |

| Measure of Effectiveness | Alternatives from WGM Report | | | |
|---|---|---|---|---|
| | Modified Record of Decision | Contra-Flow | Truck Route | Downtown Master Plan |
| Number of Intersections | 20 | 20 | 20 | 20 |
| Total Delay / Vehicle (sec/veh) | 84 | 28 | 84 | 214 |
| Total Delay (hr) | 984 | 328 | 989 | 2507 |
| Stops / Vehicle | 0.4 | 0.42 | 0.41 | 0.42 |
| Total Stops | 17097 | 17306 | 17603 | 17819 |
| Total Travel Time (hr) | 1108 | 448 | 1114 | 2631 |
| Distance Traveled (mi) | 3663 | 3595 | 3673 | 3653 |
| Fuel Consumed (gal) | 962 | 478 | 969 | 2080 |
| CO Emissions (kg) | 67.27 | 33.42 | 67.7 | 145.39 |
| Unserved Vehicles (#) | 963 | 358 | 1214 | 602 |
| Unsignalized Intersections at or above a LOS "C" | 1 | 1 | 1 | 3 |
| Signalized Intersections at or above a LOS "C" | 4 | 4 | 3 | 4 |
| Unsignalized Intersections at or below a LOS "D" | 13 | 13 | 13 | 11 |
| Signalized Intersections at or below a LOS "D" | 2 | 2 | 3 | 2 |

## Contra-Flow Alternative Existing (2003) Conditions
## Signalized* Intersection Level of Service (PM Peak Hour)

| Intersection | Delay | LOS | v/c | Stops / Vehicle | Total Travel Time (hr) | Distance Traveled (mi) | Fuel Consumed (gal) | CO Emissions (kg) |
|---|---|---|---|---|---|---|---|---|
| **Baker Avenue / 2nd Street** | **27.0** | **C** | **0.76** | **0.53** | **18** | **152** | **20** | **1.39** |
| *Eastbound Left* | *16.6* | *B* | *0.27* | *0.60* | *1* | *10* | *1* | *0.09* |
| *Eastbount Thru/Right* | *19.5* | *B* | *0.48* | *0.64* | *3* | *27* | *4* | *0.27* |
| *Westbound Left* | *10.8* | *B* | *0.09* | *0.41* | *0* | *2* | *0* | *0.02* |
| *Westbound Thru* | *11.4* | *B* | *0.20* | *0.40* | *1* | *11* | *1* | *0.08* |
| *Westbound Right* | *9.7* | *A* | *0.09* | *0.09* | *0* | *9* | *1* | *0.04* |
| *Northbound Left* | *18.1* | *B* | *0.18* | *0.60* | *0* | *3* | *0* | *0.03* |
| *Northbound Thru/Right* | *29.9* | *C* | *0.79* | *0.76* | *6* | *41* | *7* | *0.48* |
| *Southbound Left* | *129.2* | *F* | *1.07* | *0.81* | *2* | *9* | *2* | *0.14* |
| *Southbound Thru/Right* | *19.5* | *B* | *0.31* | *0.29* | *3* | *39* | *3* | *0.24* |
| **Baker Avenue / 7th Street** | **13.5** | **B** | **0.61** | **0.56** | **10** | **139** | **16** | **1.09** |
| *Eastbound Left/Thru/Right* | *23.4* | *C* | *0.70* | *0.72* | *2* | *17* | *2* | *0.17* |
| *Westbound Left/Thru* | *20.9* | *C* | *0.65* | *0.82* | *2* | *34* | *4* | *0.27* |
| *Westbound Right* | *25.0* | *C* | *0.11* | *0.21* | *1* | *21* | *1* | *0.08* |
| *Northbound Left* | *5.2* | *A* | *0.12* | *0.53* | *0* | *3* | *0* | *0.02* |
| *Northbound Thru/Right* | *8.0* | *A* | *0.52* | *0.56* | *2* | *35* | *5* | *0.32* |
| *Southbound Left* | *5.5* | *A* | *0.14* | *0.46* | *0* | *3* | *0* | *0.02* |
| *Southbound Left/Thru/Right* | *8.1* | *A* | *0.52* | *0.48* | *2* | *26* | *3* | *0.21* |
| **Central Avenue / 2nd Street** | **15.2** | **B** | **0.43** | **0.45** | **7** | **71** | **8** | **0.59** |
| *Eastbound Thru/Right* | *13.5* | *B* | *0.49* | *0.49* | *3* | *31* | *4* | *0.25* |
| *Westbound Thru/Right* | *9.1* | *A* | *0.31* | *0.27* | *2* | *19* | *2* | *0.12* |
| *Northbound Left/Thru/Right* | *21.7* | *C* | *0.22* | *0.54* | *1* | *7* | *1* | *0.08* |
| *Southbound Left/Thru/Right* | *23.5* | *C* | *0.30* | *0.56* | *2* | *14* | *2* | *0.14* |
| **Spokane Avenue / 2nd Street** | **13.1** | **B** | **0.39** | **0.39** | **7** | **71** | **8** | **0.53** |
| *Eastbound Left* | *6.0* | *A* | *0.05* | *0.23* | *0* | *2* | *0* | *0.01* |
| *Eastbound Thru/Right* | *6.7* | *A* | *0.42* | *0.10* | *2* | *26* | *2* | *0.13* |
| *Westbound Left* | *13.0* | *B* | *0.24* | *0.52* | *1* | *6* | *1* | *0.05* |
| *Westbound Thru/Right* | *13.3* | *B* | *0.29* | *0.48* | *2* | *17* | *2* | *0.14* |
| *Northbound Left* | *21.3* | *C* | *0.05* | *0.72* | *0* | *1* | *0* | *0.01* |
| *Northbound Thru/Right* | *22.1* | *C* | *0.07* | *0.30* | *0* | *5* | *0* | *0.03* |
| *Southbound Left* | *20.0* | *B* | *0.04* | *0.71* | *0* | *1* | *0* | *0.01* |
| *Southbound Thru/Right* | *22.4* | *C* | *0.29* | *0.65* | *2* | *14* | *2* | *0.14* |
| **Spokane Avenue / 7th Street** | **14.9** | **B** | **0.60** | **0.36** | **10** | **142** | **14** | **0.95** |
| *Eastbound Left/Thru* | *37.6* | *D* | *0.32* | *0.79* | *1* | *10* | *1* | *0.10* |
| *Eastbound Right* | *47.1* | *D* | *0.07* | *0.34* | *1* | *24* | *2* | *0.11* |
| *Westbound Left* | *52.6* | *D* | *0.68* | *0.93* | *2* | *7* | *2* | *0.13* |
| *Westbound Thru/Right* | *41.8* | *D* | *0.41* | *0.83* | *1* | *7* | *1* | *0.10* |
| *Northbound Left* | *8.5* | *A* | *0.58* | *0.46* | *2* | *21* | *2* | *0.17* |
| *Northbound Thru/Right* | *2.7* | *A* | *0.17* | *0.12* | *1* | *32* | *2* | *0.13* |
| *Southbound Left* | *1.9* | *A* | *0.03* | *0.24* | *0* | *1* | *0* | *0.01* |
| *Southbound Thru/Right* | *3.6* | *A* | *0.45* | *0.25* | *2* | *40* | *3* | *0.20* |
| **Spokane Avenue / 13th Street** | **3.3** | **A** | **0.34** | **0.13** | **8** | **239** | **11** | **0.80** |
| *Eastbound Left/Thru* | *-* | *D* | *-* | *-* | *0* | *0* | *0* | *0.00* |
| *Eastbound Right* | *46.8* | *D* | *0.02* | *0.00* | *0* | *3* | *0* | *0.01* |
| *Westbound Left/Thru* | *48.6* | *D* | *0.21* | *1.07* | *0* | *2* | *0* | *0.02* |
| *Westbound Right* | *46.7* | *D* | *0.01* | *0.50* | *0* | *2* | *0* | *0.01* |
| *Northbound Left* | *1.2* | *A* | *0.03* | *0.14* | *0* | *1* | *0* | *0.00* |
| *Northbound Thru/Right* | *1.3* | *A* | *0.26* | *0.12* | *2* | *63* | *3* | *0.23* |
| *Southbound Left* | *1.4* | *A* | *0.02* | *0.25* | *0* | *2* | *0* | *0.01* |
| *Southbound Thru/Right* | *2.0* | *A* | *0.33* | *0.12* | *5* | *167* | *7* | *0.52* |

**Signal timing was determined by optimizing the network operation through Synchro*

## Contra-Flow Alternative Existing (2003) Conditions
## Unsignalized Intersection Level of Service (PM Peak Hour)

| Intersection | Delay | LOS | v/c | Stops / Vehicle | Total Travel Time (hr) | Distance Traveled (mi) | Fuel Consumed (gal) | CO Emissions (kg) |
|---|---|---|---|---|---|---|---|---|
| **Baker Avenue / 3rd Street** | **2.9** | **C** | **-** | **0.19** | **4** | **75** | **5** | **0.34** |
| *Eastbound Left/Thru/Right* | *23.7* | *C* | *0.22* | *1.00* | *0* | *3* | *1* | *0.04* |
| *Westbound Left/Thru/Right* | *21.1* | *C* | *0.27* | *1.00* | *1* | *4* | *1* | *0.06* |
| *Northbound Left/Thru/Right* | *0.2* | *A* | *0.01* | *0.04* | *2* | *41* | *2* | *0.14* |
| *Southbound Left/Thru/Right* | *1.8* | *A* | *0.04* | *0.16* | *1* | *27* | *2* | *0.11* |
| **Baker Avenue / 4th Street** | **2.5** | **C** | **-** | **0.18** | **4** | **74** | **5** | **0.33** |
| *Eastbound Left/Thru/Right* | *17.8* | *C* | *0.20* | *1.00* | *0* | *4* | *1* | *0.05* |
| *Westbound Left/Thru/Right* | *23.2* | *C* | *0.20* | *1.00* | *0* | *3* | *1* | *0.04* |
| *Northbound Left/Thru/Right* | *0.5* | *A* | *0.02* | *0.09* | *2* | *40* | *2* | *0.14* |
| *Southbound Left/Thru/Right* | *0.8* | *A* | *0.02* | *0.07* | *1* | *27* | *1* | *0.09* |
| **Baker Avenue / 5th Street** | **4.2** | **D** | **-** | **0.23** | **6** | **104** | **7** | **0.47** |
| *Eastbound Left/Thru/Right* | *26.3* | *D* | *0.40* | *1.00* | *1* | *4* | *1* | *0.08* |
| *Westbound Left/Thru/Right* | *23.8* | *C* | *0.29* | *1.00* | *1* | *3* | *1* | *0.05* |
| *Northbound Left/Thru/Right* | *0.5* | *A* | *0.02* | *0.11* | *3* | *71* | *3* | *0.24* |
| *Southbound Left/Thru/Right* | *0.8* | *A* | *0.02* | *0.07* | *1* | *27* | *1* | *0.09* |
| **Baker Avenue / 6th Street** | **3.2** | **C** | **-** | **0.31** | **5** | **97** | **7** | **0.47** |
| *Eastbound Left/Right* | *16.2* | *C* | *0.38* | *1.00* | *1* | *12* | *2* | *0.13* |
| *Northbound Left/Thru* | *1.7* | *A* | *0.07* | *0.32* | *2* | *35* | *3* | *0.18* |
| *Southbound Thru/Right* | *0.0* | *-* | *0.15* | *0.00* | *2* | *49* | *2* | *0.16* |
| **Baker Avenue / 8th Street** | **0.4** | **B** | **-** | **0.06** | **4** | **121** | **5** | **0.36** |
| *Eastbound Left/Right* | *11.8* | *B* | *0.03* | *1.00* | *0* | *1* | *0* | *0.01* |
| *Northbound Left/Thru* | *0.4* | *A* | *0.02* | *0.08* | *3* | *86* | *4* | *0.26* |
| *Southbound Thru/Right* | *0.0* | *-* | *0.32* | *0.00* | *1* | *34* | *1* | *0.09* |
| **Baker Avenue / 10th Street** | **1.1** | **C** | **-** | **0.11** | **5** | **165** | **7** | **0.51** |
| *Eastbound Left/Thru/Right* | *0.0* | *A* | *0.00* | *1.00* | *0* | *0* | *0* | *0.00* |
| *Westbound Left/Thru/Right* | *18.8* | *C* | *0.14* | *1.00* | *0* | *3* | *0* | *0.03* |
| *Northbound Left/Thru/Right* | *0.0* | *-* | *0.00* | *0.00* | *3* | *88* | *3* | *0.23* |
| *Southbound Left/Thru/Right* | *0.9* | *A* | *0.03* | *0.17* | *2* | *74* | *4* | *0.25* |
| **Baker Avenue / 13th Street** | **20.0** | **D** | **-** | **1.00** | **10** | **126** | **17** | **1.18** |
| *Westbound Left* | *8.9* | *A* | *-* | *1.00* | *0* | *0* | *0* | *0.00* |
| *Westbound Right* | *9.0* | *-* | *-* | *1.00* | *0* | *6* | *1* | *0.04* |
| *Northbound Thru* | *25.4* | *D* | *-* | *1.00* | *5* | *44* | *8* | *0.57* |
| *Northbound Right* | *7.0* | *-* | *-* | *1.00* | *0* | *0* | *0* | *0.00* |
| *Southbound Left* | *8.3* | *C* | *-* | *1.00* | *0* | *10* | *1* | *0.07* |
| *Southbound Thru* | *17.0* | *-* | *-* | *1.00* | *4* | *65* | *7* | *0.50* |
| **Spokane Avenue / 3rd Street** | **3.0** | **B** | **-** | **0.26** | **2** | **41** | **3** | **0.20** |
| *Eastbound Left/Thru/Right* | *13.4* | *B* | *0.16* | *1.00* | *0* | *4* | *1* | *0.05* |
| *Westbound Left/Thru/Right* | *13.1* | *B* | *0.11* | *1.00* | *0* | *3* | *0* | *0.03* |
| *Northbound Left/Thru/Right* | *2.4* | *A* | *0.01* | *0.17* | *0* | *5* | *0* | *0.02* |
| *Southbound Left/Thru/Right* | *0.2* | *A* | *0.01* | *0.05* | *1* | *29* | *1* | *0.10* |
| **Spokane Avenue / 4th Street** | **3.0** | **C** | **-** | **0.24** | **2** | **47** | **3** | **0.22** |
| *Eastbound Left/Thru/Right* | *13.8* | *B* | *0.13* | *1.00* | *0* | *3* | *0* | *0.03* |
| *Westbound Left/Thru/Right* | *16.0* | *C* | *0.19* | *1.00* | *1* | *5* | *1* | *0.05* |
| *Northbound Left/Thru/Right* | *2.5* | *A* | *0.02* | *0.16* | *0* | *8* | *0* | *0.03* |
| *Southbound Left/Thru/Right* | *0.2* | *A* | *0.01* | *0.05* | *1* | *32* | *2* | *0.11* |
| **Spokane Avenue / 5th Street** | **1.8** | **C** | **-** | **0.16** | **2** | **51** | **3** | **0.21** |
| *Eastbound Left/Thru/Right* | *13.7* | *B* | *0.09* | *1.00* | *0* | *2* | *0* | *0.02* |
| *Westbound Left/Thru/Right* | *15.5* | *C* | *0.09* | *1.00* | *0* | *2* | *0* | *0.02* |
| *Northbound Left/Thru/Right* | *2.7* | *A* | *0.02* | *0.21* | *1* | *14* | *1* | *0.06* |
| *Southbound Left/Thru/Right* | *0.1* | *A* | *0.00* | *0.02* | *1* | *32* | *2* | *0.11* |
| **Spokane Avenue / 6th Street** | **4.1** | **D** | **-** | **0.27** | **4** | **78** | **5** | **0.36** |
| *Eastbound Left/Thru/Right* | *17.5* | *C* | *0.34* | *1.00* | *1* | *5* | *1* | *0.09* |
| *Westbound Left/Thru/Right* | *32.8* | *D* | *0.11* | *1.00* | *0* | *1* | *0* | *0.01* |
| *Northbound Left/Thru/Right* | *5.7* | *A* | *0.11* | *0.37* | *1* | *18* | *1* | *0.09* |
| *Southbound Left/Thru/Right* | *0.0* | *-* | *0.00* | *0.00* | *2* | *53* | *2* | *0.17* |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Spokane Avenue / 8th Street** | **1.0** | **E** | **-** | **0.03** | **4** | **117** | **5** | **0.35** |
| *Westbound Left/Right* | *39.2* | *E* | *0.31* | *1.00* | *1* | *3* | *1* | *0.05* |
| *Northbound Thru/Right* | *0.0* | *-* | *0.32* | *0.00* | *2* | *54* | *2* | *0.14* |
| *Southbound Thru/Left* | *0.0* | *-* | *0.36* | *0.00* | *2* | *61* | *2* | *0.16* |
| **Spokane Avenue / 9th Street** | **0.0** | **A** | **-** | **0.00** | **3** | **94** | **4** | **0.25** |
| *Westbound Left/Right* | *0.0* | *A* | *0.00* | *1.00* | *0* | *0* | *0* | *0.00* |
| *Northbound Thru/Right* | *0.0* | *-* | *0.34* | *0.00* | *1* | *33* | *1* | *0.09* |
| *Southbound Thru/Left* | *0.0* | *-* | *0.38* | *0.00* | *2* | *61* | *2* | *0.16* |
| **Spokane Avenue / Riverside Avenue** | **0.1** | **B** | **-** | **0.01** | **5** | **186** | **7** | **0.50** |
| *Westbound Left/Right* | *11.4* | *B* | *0.30* | *1.00* | *0* | *2* | *0* | *0.01* |
| *Northbound Thru/Right* | *0.0* | *-* | *0.34* | *0.00* | *4* | *150* | *6* | *0.40* |
| *Southbound Thru/Left* | *0.0* | *-* | *0.35* | *0.00* | *1* | *35* | *1* | *0.09* |

## Contra-Flow Alternative Future (2030) Conditions
## Signalized* Intersection Level of Service (PM Peak Hour)

| Intersection | Delay | LOS | v/c | Stops / Vehicle | Total Travel Time (hr) | Distance Traveled (mi) | Fuel Consumed (gal) | CO Emissions (kg) |
|---|---|---|---|---|---|---|---|---|
| **Baker Avenue / 2nd Street** | **34.5** | **C** | **1.05** | **0.64** | **36** | **201** | **37** | **2.58** |
| *Eastbound Left* | *26.0* | *C* | *0.44* | *0.70* | *2* | *12* | *2* | *0.14* |
| *Eastbount Thru/Right* | *32.0* | *C* | *0.70* | *0.77* | *6* | *34* | *6* | *0.43* |
| *Westbound Left* | *24.2* | *C* | *0.42* | *0.74* | *1* | *5* | *1* | *0.06* |
| *Westbound Thru* | *21.3* | *C* | *0.28* | *0.64* | *2* | *14* | *2* | *0.14* |
| *Westbound Right* | *21.1* | *C* | *0.26* | *0.22* | *1* | *18* | *2* | *0.11* |
| *Northbound Left* | *14.9* | *B* | *0.17* | *0.57* | *0* | *2* | *0* | *0.02* |
| *Northbound Thru/Right* | *27.2* | *C* | *0.80* | *0.80* | *8* | *49* | *9* | *0.60* |
| *Southbound Left* | *208.3* | *F* | *1.31* | *0.71* | *11* | *12* | *9* | *0.60* |
| *Southbound Thru/Right* | *17.8* | *B* | *0.48* | *0.53* | *6* | *57* | *7* | *0.48* |
| **Baker Avenue / 7th Street** | **175.0** | **F** | **1.66** | **0.71** | **82** | **231** | **76** | **5.30** |
| *Eastbound Left/Thru/Right* | *131.5* | *F* | *1.23* | *0.77* | *26* | *43* | *22* | *1.53* |
| *Westbound Left/Thru* | *15.2* | *B* | *0.72* | *0.77* | *4* | *56* | *6* | *0.43* |
| *Westbound Right* | *8.8* | *A* | *0.16* | *0.16* | *1* | *29* | *2* | *0.11* |
| *Northbound Left* | *10.5* | *B* | *0.39* | *0.81* | *0* | *4* | *1* | *0.05* |
| *Northbound Thru/Right* | *30.9* | *C* | *0.93* | *0.72* | *8* | *46* | *10* | *0.72* |
| *Southbound Left* | *161.9* | *F* | *1.24* | *0.71* | *9* | *9* | *7* | *0.50* |
| *Southbound Left/Thru/Right* | *457.9* | *F* | *1.97* | *0.75* | *34* | *44* | *28* | *1.96* |
| **Central Avenue / 2nd Street** | **16.6** | **B** | **0.54** | **0.57** | **12** | **99** | **14** | **0.97** |
| *Eastbound Thru/Right* | *17.4* | *B* | *0.57* | *0.65* | *5* | *34* | *5* | *0.37* |
| *Westbound Thru/Right* | *12.0* | *B* | *0.57* | *0.44* | *3* | *33* | *4* | *0.26* |
| *Northbound Left/Thru/Right* | *18.7* | *B* | *0.33* | *0.61* | *2* | *11* | *2* | *0.13* |
| *Southbound Left/Thru/Right* | *21.6* | *C* | *0.45* | *0.62* | *2* | *21* | *3* | *0.21* |
| **Spokane Avenue / 2nd Street** | **14.2** | **B** | **0.48** | **0.47** | **11** | **107** | **12** | **0.86** |
| *Eastbound Left* | *7.4* | *A* | *0.20* | *0.25* | *0* | *4* | *0* | *0.02* |
| *Eastbound Thru/Right* | *8.2* | *A* | *0.50* | *0.18* | *2* | *28* | *2* | *0.16* |
| *Westbound Left* | *12.5* | *B* | *0.20* | *0.55* | *0* | *4* | *0* | *0.03* |
| *Westbound Thru/Right* | *15.0* | *B* | *0.49* | *0.61* | *3* | *27* | *4* | *0.25* |
| *Northbound Left* | *19.2* | *B* | *0.27* | *0.66* | *1* | *6* | *1* | *0.06* |
| *Northbound Thru/Right* | *18.8* | *B* | *0.32* | *0.52* | *2* | *16* | *2* | *0.14* |
| *Southbound Left* | *15.8* | *B* | *0.06* | *0.73* | *0* | *2* | *0* | *0.01* |
| *Southbound Thru/Right* | *18.7* | *B* | *0.39* | *0.62* | *2* | *20* | *3* | *0.18* |
| **Spokane Avenue / 7th Street** | **12.1** | **B** | **0.86** | **0.57** | **17** | **253** | **26** | **1.84** |
| *Eastbound Left/Thru* | *13.0* | *B* | *0.34* | *0.71* | *1* | *21* | *2* | *0.15* |
| *Eastbound Right* | *16.1* | *B* | *0.67* | *0.48* | *5* | *99* | *8* | *0.58* |
| *Westbound Left* | *13.5* | *B* | *0.39* | *0.73* | *1* | *8* | *1* | *0.09* |
| *Westbound Thru/Right* | *12.6* | *B* | *0.28* | *0.59* | *1* | *10* | *1* | *0.09* |
| *Northbound Left* | *-* | *-* | *-* | *0.00* | *0* | *0* | *0* | *0.00* |
| *Northbound Thru/Right* | *7.4* | *A* | *0.53* | *0.49* | *4* | *66* | *7* | *0.51* |
| *Southbound Left* | *-* | *-* | *-* | *0.00* | *0* | *0* | *0* | *0.00* |
| *Southbound Thru/Right* | *13.6* | *B* | *0.80* | *0.71* | *5* | *48* | *6* | *0.43* |
| **Spokane Avenue / 13th Street** | **14.7** | **B** | **0.79** | **0.57** | **29** | **495** | **44** | **3.10** |
| *Eastbound Left/Thru* | *32.1* | *C* | *0.10* | *0.84* | *0* | *3* | *0* | *0.03* |
| *Eastbound Right* | *31.7* | *C* | *0.05* | *0.23* | *0* | *7* | *1* | *0.04* |
| *Westbound Left/Thru* | *64.9* | *E* | *0.88* | *0.88* | *4* | *24* | *4* | *0.30* |
| *Westbound Right* | *32.5* | *C* | *0.15* | *0.33* | *1* | *12* | *1* | *0.07* |
| *Northbound Left* | *10.7* | *B* | *0.21* | *0.29* | *0* | *3* | *0* | *0.01* |
| *Northbound Thru/Right* | *7.8* | *A* | *0.67* | *0.48* | *7* | *134* | *13* | *0.94* |
| *Southbound Left* | *16.3* | *B* | *0.40* | *0.56* | *0* | *9* | *1* | *0.05* |
| *Southbound Thru/Right* | *13.3* | *B* | *0.75* | *0.65* | *15* | *303* | *24* | *1.66* |

**Signal timing was determined by optimizing the network operation through Synchro*

## Contra-Flow Alternative Future (2030) Conditions
## Unsignalized Intersection Level of Service (PM Peak Hour)

| Intersection | Delay | LOS | v/c | Stops / Vehicle | Total Travel Time (hr) | Distance Traveled (mi) | Fuel Consumed (gal) | CO Emissions (kg) |
|---|---|---|---|---|---|---|---|---|
| **Baker Avenue / 3rd Street** | **84.0** | **F** | **-** | **0.35** | **43** | **112** | **36** | **2.51** |
| *Eastbound Left/Thru/Right* | *439.5* | *F* | *1.72* | *1.00* | *19* | *10* | *15* | *1.03* |
| *Westbound Left/Thru/Right* | *352.0* | *F* | *1.59* | *1.00* | *20* | *10* | *16* | *1.11* |
| *Northbound Left/Thru/Right* | *0.6* | *A* | *0.02* | *0.11* | *2* | *44* | *2* | *0.16* |
| *Southbound Left/Thru/Right* | *2.8* | *A* | *0.22* | *0.24* | *2* | *48* | *3* | *0.20* |
| **Baker Avenue / 4th Street** | **88.7** | **F** | **-** | **0.34** | **47** | **112** | **39** | **2.69** |
| *Eastbound Left/Thru/Right* | *317.1* | *F* | *1.44* | *1.00* | *13* | *9* | *10* | *0.71* |
| *Westbound Left/Thru/Right* | *494.1* | *F* | *1.90* | *1.00* | *30* | *10* | *23* | *1.62* |
| *Northbound Left/Thru/Right* | *0.9* | *A* | *0.03* | *0.17* | *2* | *41* | *2* | *0.17* |
| *Southbound Left/Thru/Right* | *2.0* | *A* | *0.24* | *0.17* | *2* | *51* | *3* | *0.20* |
| **Baker Avenue / 5th Street** | **56.2** | **F** | **-** | **0.31** | **31** | **130** | **27** | **1.89** |
| *Eastbound Left/Thru/Right* | *275.8* | *F* | *1.35* | *1.00* | *11* | *5* | *9* | *0.60* |
| *Westbound Left/Thru/Right* | *255.5* | *F* | *1.38* | *1.00* | *16* | *9* | *12* | *0.87* |
| *Northbound Left/Thru/Right* | *0.5* | *A* | *0.02* | *0.10* | *3* | *67* | *3* | *0.20* |
| *Southbound Left/Thru/Right* | *1.7* | *A* | *0.25* | *0.15* | *2* | *49* | *3* | *0.19* |
| **Baker Avenue / 6th Street** | **27.5** | **F** | **-** | **0.61** | **21** | **159** | **22** | **1.57** |
| *Eastbound Left/Right* | *143.5* | *F* | *1.18* | *1.00* | *14* | *22* | *12* | *0.85* |
| *Northbound Left/Thru* | *5.5* | *A* | *0.22* | *1.05* | *3* | *42* | *6* | *0.41* |
| *Southbound Thru/Right* | *0.0* | *-* | *0.27* | *0.00* | *4* | *95* | *4* | *0.30* |
| **Baker Avenue / 8th Street** | **13.3** | **F** | **-** | **0.43** | **12** | **182** | **17** | **1.16** |
| *Eastbound Left/Right* | *98.9* | *F* | *0.98* | *1.00* | *6* | *13* | *6* | *0.39* |
| *Northbound Left/Thru* | *3.5* | *A* | *0.14* | *0.67* | *4* | *120* | *9* | *0.64* |
| *Southbound Thru/Right* | *0.0* | *-* | *0.46* | *0.00* | *1* | *49* | *2* | *0.13* |
| **Baker Avenue / 10th Street** | **16.0** | **F** | **-** | **0.49** | **14** | **239** | **20** | **14.00** |
| *Eastbound Left/Thru/Right* | *0.0* | *A* | *0.00* | *1.00* | *0* | *0* | *0* | *0.00* |
| *Westbound Left/Thru/Right* | *140.8* | *F* | *1.06* | *1.00* | *7* | *13* | *6* | *0.41* |
| *Northbound Left/Thru/Right* | *0.0* | *-* | *0.00* | *0.00* | *3* | *112* | *4* | *0.30* |
| *Southbound Left/Thru/Right* | *4.5* | *A* | *0.19* | *0.85* | *4* | *114* | *10* | *0.69* |
| **Baker Avenue / 13th Street** | **72.7** | **F** | **-** | **1.00** | **36** | **180** | **4.5** | **2.81** |
| *Westbound Left* | *10.3* | *B* | *-* | *1.00* | *0* | *2* | *-* | *0.01* |
| *Westbound Right* | *10.3* | *-* | *-* | *1.00* | *1* | *9* | *-* | *0.07* |
| *Northbound Thru* | *91.6* | *F* | *-* | *1.00* | *18* | *56* | *3* | *1.33* |
| *Northbound Right* | *7.3* | *-* | *-* | *1.00* | *0* | *5* | *-* | *0.05* |
| *Southbound Left* | *8.9* | *F* | *-* | *1.00* | *0* | *11* | *10.1* | *0.08* |
| *Southbound Thru* | *78.1* | *-* | *-* | *1.00* | *16* | *96* | *5.3* | *1.28* |
| **Spokane Avenue / 3rd Street** | **7.9** | **D** | **-** | **0.40** | **5** | **65** | **6** | **0.42** |
| *Eastbound Left/Thru/Right* | *25.5* | *D* | *0.53* | *1.00* | *2* | *8* | *2* | *0.14* |
| *Westbound Left/Thru/Right* | *23.1* | *C* | *0.39* | *1.00* | *1* | *7* | *1* | *0.09* |
| *Northbound Left/Thru/Right* | *3.2* | *A* | *0.09* | *0.24* | *1* | *21* | *1* | *0.09* |
| *Southbound Left/Thru/Right* | *0.4* | *A* | *0.01* | *0.07* | *1* | *28* | *1* | *0.10* |
| **Spokane Avenue / 4th Street** | **13.7** | **F** | **-** | **0.36** | **8** | **82** | **9** | **0.62** |
| *Eastbound Left/Thru/Right* | *34.3* | *D* | *0.59* | *1.00* | *2* | *8* | *2* | *0.14* |
| *Westbound Left/Thru/Right* | *90.6* | *F* | *0.83* | *1.00* | *3* | *8* | *3* | *0.21* |
| *Northbound Left/Thru/Right* | *4.0* | *A* | *0.15* | *0.30* | *2* | *33* | *2* | *0.16* |
| *Southbound Left/Thru/Right* | *0.3* | *A* | *0.01* | *0.05* | *1* | *34* | *2* | *0.11* |
| **Spokane Avenue / 5th Street** | **5.2** | **F** | **-** | **0.27** | **6** | **105** | **7** | **0.52** |
| *Eastbound Left/Thru/Right* | *25.8* | *D* | *0.35* | *1.00* | *1* | *4* | *1* | *0.07* |
| *Westbound Left/Thru/Right* | *51.2* | *F* | *0.49* | *1.00* | *1* | *4* | *1* | *0.08* |
| *Northbound Left/Thru/Right* | *3.7* | *A* | *0.17* | *0.32* | *3* | *60* | *4* | *0.25* |
| *Southbound Left/Thru/Right* | *0.1* | *A* | *0.00* | *0.02* | *1* | *37* | *2* | *0.12* |
| **Spokane Avenue / 6th Street** | **9.0** | **F** | **-** | **0.35** | **9** | **121** | **10** | **0.73** |
| *Eastbound Left/Thru/Right* | *40.5* | *E* | *0.67* | *1.00* | *2* | *7* | *2* | *0.17* |
| *Westbound Left/Thru/Right* | *182.0* | *F* | *0.67* | *1.00* | *2* | *2* | *1* | *0.09* |
| *Northbound Left/Thru/Right* | *4.7* | *A* | *0.18* | *0.44* | *3* | *51* | *4* | *0.28* |
| *Southbound Left/Thru/Right* | *0.0* | *-* | *0.21* | *0.00* | *2* | *61* | *3* | *0.19* |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Spokane Avenue / 8th Street** | **6.5** | **F** | **-** | **0.08** | **12** | **212** | **14** | **0.96** |
| *Westbound Left/Right* | *362.0* | *F* | *1.25* | *1.00* | *5* | *4* | *4* | *0.29* |
| *Northbound Thru/Right* | *0.0* | *-* | *0.59* | *0.00* | *3* | *99* | *4* | *0.26* |
| *Southbound Thru/Left* | *1.8* | *A* | *0.65* | *0.12* | *3* | *109* | *6* | *0.40* |
| **Spokane Avenue / 9th Street** | **2.8** | **F** | **-** | **0.01** | **7** | **167** | **8** | **0.58** |
| *Westbound Left/Right* | *375.1* | *F* | *0.95* | *1.00* | *2* | *1* | *2* | *0.13* |
| *Northbound Thru/Right* | *0.0* | *-* | *0.62* | *0.00* | *2* | *61* | *2* | *0.16* |
| *Southbound Thru/Left* | *0.0* | *-* | *0.66* | *0.00* | *3* | *105* | *4* | *0.28* |
| **Spokane Avenue / Riverside Avenue** | **0.1** | **C** | **-** | **0.01** | **10** | **342** | **13** | **0.92** |
| *Westbound Left/Right* | *16.6* | *C* | *0.08* | *1.00* | *0* | *3* | *0* | *0.02* |
| *Northbound Thru/Right* | *0.0* | *-* | *0.62* | *0.00* | *8* | *275* | *10* | *0.73* |
| *Southbound Thru/Left* | *0.0* | *-* | *0.66* | *0.00* | *2* | *64* | *2* | *0.17* |

## Modified Alternative C (Offset) Configuration Existing (2003) Conditions
## Signalized* Intersection Level of Service (PM Peak Hour)

| Intersection | Delay | LOS | v/c | Stops / Vehicle | Total Travel Time (hr) | Distance Traveled (mi) | Fuel Consumed (gal) | CO Emissions (kg) |
|---|---|---|---|---|---|---|---|---|
| **Baker Avenue / 2nd Street** | **30.1** | **C** | **0.73** | **0.53** | **17** | **162** | **20** | **1.40** |
| *Eastbound Left* | *9.5* | *A* | *0.26* | *0.51* | *1* | *10* | *1* | *0.07* |
| *Eastbound Thru/Right* | *10.8* | *B* | *0.43* | *0.52* | *3* | *30* | *3* | *0.23* |
| *Westbound Left* | *2.7* | *A* | *0.08* | *0.17* | *0* | *2* | *0* | *0.01* |
| *Westbound Thru* | *3.1* | *A* | *0.28* | *0.21* | *1* | *20* | *1* | *0.10* |
| *Westbound Right* | *1.0* | *A* | *0.13* | *0.04* | *1* | *13* | *1* | *0.05* |
| *Northbound Left* | *26.2* | *C* | *0.38* | *0.72* | *0* | *3* | *0* | *0.03* |
| *Northbound Thru/Right* | *42.6* | *D* | *0.87* | *0.87* | *5* | *32* | *6* | *0.41* |
| *Southbound Left* | *234.9* | *F* | *1.31* | *0.81* | *1* | *7* | *1* | *0.08* |
| *Southbound Thru* | *34.0* | *C* | *0.76* | *0.85* | *4* | *28* | *5* | *0.35* |
| *Southbound Right* | *22.9* | *C* | *0.17* | *0.09* | *1* | *17* | *1* | *0.07* |
| **Baker Avenue / 13th Street** | **18.7** | **B** | **0.47** | **0.27** | **6** | **157** | **9** | **0.66** |
| *Westbound Left* | *103.1* | *F* | *-* | *0.00* | *0* | *0* | *0* | *0.00* |
| *Westbound Right* | *103.1* | *F* | *0.14* | *0.08* | *1* | *20* | *1* | *0.07* |
| *Northbound Thru* | *2.7* | *A* | *0.29* | *0.30* | *1* | *31* | *2* | *0.16* |
| *Northbound Right* | *1.8* | *A* | *0.01* | *0.38* | *0* | *1* | *0* | *0.00* |
| *Southbound Left* | *3.0* | *A* | *0.32* | *0.33* | *2* | *67* | *4* | *0.28* |
| *Southbound Thru* | *2.3* | *A* | *0.20* | *0.28* | *1* | *37* | *2* | *0.14* |
| **Central Avenue / 2nd Street** | **11.8** | **B** | **0.43** | **0.47** | **7** | **81** | **9** | **0.62** |
| *Eastbound Left/Thru/Right* | *10.2* | *B* | *0.52* | *0.46* | *3* | *35* | *4* | *0.25* |
| *Westbound Left/Thru/Right* | *10.1* | *B* | *0.53* | *0.49* | *3* | *35* | *4* | *0.27* |
| *Northbound Left/Thru/Right* | *20.4* | *C* | *0.05* | *0.38* | *0* | *2* | *0* | *0.02* |
| *Southbound Left/Thru/Right* | *22.3* | *C* | *0.20* | *0.50* | *1* | *9* | *1* | *0.08* |
| **Spokane Avenue / 2nd Street** | **14.6** | **B** | **0.55** | **0.56** | **10** | **105** | **13** | **0.88** |
| *Eastbound Left* | *4.1* | *A* | *0.06* | *0.20* | *0* | *2* | *0* | *0.01* |
| *Eastbound Thru/Right* | *7.6* | *A* | *0.56* | *0.49* | *2* | *32* | *3* | *0.21* |
| *Westbound Left* | *12.9* | *B* | *0.20* | *0.56* | *0* | *4* | *0* | *0.03* |
| *Westbound Thru/Right* | *14.0* | *B* | *0.36* | *0.58* | *2* | *20* | *3* | *0.18* |
| *Northbound Left* | *20.6* | *C* | *0.36* | *0.68* | *1* | *10* | *1* | *0.10* |
| *Northbound Left/Thru/Right* | *21.4* | *C* | *0.46* | *0.62* | *3* | *23* | *3* | *0.22* |
| *Southbound Left* | *16.0* | *B* | *0.05* | *0.64* | *0* | *1* | *0* | *0.01* |
| *Southbound Thru/Right* | *17.8* | *B* | *0.28* | *0.58* | *2* | *14* | *2* | *0.12* |
| **Spokane Avenue / 13th Street** | **7.4** | **A** | **0.52** | **0.37** | **13** | **267** | **21** | **1.46** |
| *Eastbound Left* | *8.6* | *A* | *0.10* | *0.61* | *0* | *3* | *0* | *0.02* |
| *Eastbound Thru* | *8.6* | *A* | *0.09* | *0.58* | *0* | *4* | *0* | *0.02* |
| *Eastbound Right* | *10.3* | *B* | *0.53* | *0.53* | *2* | *31* | *2* | *0.17* |
| *Westbound Left* | *14.3* | *B* | *0.39* | *0.72* | *1* | *16* | *1* | *0.10* |
| *Westbound Thru* | *12.7* | *B* | *0.12* | *0.69* | *0* | *7* | *1* | *0.04* |
| *Westbound Right* | *12.3* | *B* | *0.04* | *0.26* | *0* | *7* | *0* | *0.03* |
| *Northbound Left* | *5.5* | *A* | *0.15* | *0.59* | *0* | *5* | *1* | *0.04* |
| *Northbound Thru* | *6.2* | *A* | *0.39* | *0.54* | *3* | *60* | *6* | *0.44* |
| *Northbounc Right* | *5.0* | *A* | *0.12* | *0.13* | *1* | *15* | *1* | *0.06* |
| *Southbound Left* | *4.8* | *A* | *0.05* | *0.67* | *0* | *3* | *0* | *0.01* |
| *Southbound Thru* | *5.8* | *A* | *0.33* | *0.51* | *4* | *112* | *7* | *0.52* |
| *Southbound Right* | *4.5* | *A* | *0.01* | *0.37* | *0* | *4* | *0* | *0.01* |

**Signal timing was determined by optimizing the network operation through Synchro*

## Modified Alternative C (Offset) Configuration Existing (2003) Conditions
## Unsignalized Intersection Level of Service (PM Peak Hour)

| Intersection | Delay | LOS | v/c | Stops / Vehicle | Total Travel Time (hr) | Distance Traveled (mi) | Fuel Consumed (gal) | CO Emissions (kg) |
|---|---|---|---|---|---|---|---|---|
| **Baker Avenue / 3rd Street** | **2.6** | **C** | **-** | **0.17** | **4** | **75** | **5** | **0.32** |
| *Eastbound Left/Thru/Right* | *18.2* | *C* | *0.10* | *1.00* | *0* | *2* | *0* | *0.02* |
| *Westbound Left/Thru/Right* | *20.5* | *C* | *0.31* | *1.00* | *1* | *5* | *1* | *0.07* |
| *Northbound Left/Thru/Right* | *0.2* | *A* | *0.01* | *0.05* | *1* | *32* | *2* | *0.11* |
| *Southbound Left/Thru/Right* | *0.8* | *A* | *0.17* | *0.07* | *1* | *36* | *2* | *0.13* |
| **Baker Avenue / 4th Street** | **3.5** | **C** | **-** | **0.21** | **4** | **76** | **5** | **0.36** |
| *Eastbound Left/Thru/Right* | *18.8* | *C* | *0.22* | *1.00* | *1* | *4* | *1* | *0.05* |
| *Westbound Left/Thru/Right* | *24.8* | *C* | *0.36* | *1.00* | *1* | *4* | *1* | *0.07* |
| *Northbound Left/Thru/Right* | *0.4* | *A* | *0.01* | *0.07* | *1* | *30* | *2* | *0.11* |
| *Southbound Left/Thru/Right* | *1.0* | *A* | *0.17* | *0.09* | *2* | *37* | *2* | *0.13* |
| **Baker Avenue / 5th Street** | **5.1** | **D** | **-** | **0.26** | **6** | **96** | **7** | **0.47** |
| *Eastbound Left/Thru/Right* | *26.4* | *D* | *0.40* | *1.00* | *1* | *4* | *1* | *0.08* |
| *Westbound Left/Thru/Right* | *25.8* | *D* | *0.42* | *1.00* | *1* | *5* | *1* | *0.09* |
| *Northbound Left/Thru/Right* | *0.4* | *A* | *0.01* | *0.09* | *2* | *51* | *2* | *0.17* |
| *Southbound Left/Thru/Right* | *1.1* | *A* | *0.19* | *0.09* | *2* | *37* | *2* | *0.13* |
| **Baker Avenue / 6th Street** | **2.5** | **C** | **-** | **0.24** | **5** | **103** | **6** | **0.44** |
| *Eastbound Left/Right* | *15.5* | *C* | *0.31* | *1.00* | *1* | *9* | *1* | *0.10* |
| *Northbound Left/Thru* | *1.6* | *A* | *0.06* | *0.29* | *1* | *26* | *2* | *0.13* |
| *Southbound Thru/Right* | *0.0* | *-* | *0.21* | *0.00* | *3* | *68* | *3* | *0.21* |
| **Baker Avenue / 7th Street** | **4.9** | **C** | **-** | **0.36** | **5** | **86** | **8** | **0.56** |
| *Eastbound Left/Right* | *24.2* | *C* | *0.57* | *1.00* | *2* | *15* | *3* | *0.18* |
| *Northbound Left/Thru* | *2.9* | *A* | *0.11* | *0.53* | *1* | *37* | *4* | *0.27* |
| *Southbound Thru/Right* | *0.0* | *-* | *0.21* | *0.00* | *1* | *34* | *2* | *0.11* |
| **Baker Avenue / 8th Street** | **0.5** | **-** | **-** | **0.08** | **4** | **132** | **6** | **0.41** |
| *Eastbound Left/Right* | *11.1* | *B* | *0.06* | *1.00* | *0* | *2* | *0* | *0.02* |
| *Northbound Left/Thru* | *0.6* | *A* | *0.02* | *0.11* | *3* | *85* | *4* | *0.26* |
| *Southbound Thru/Right* | *0.0* | *-* | *0.28* | *0.00* | *1* | *46* | *2* | *0.12* |
| **Baker Avenue / 10th Street** | **0.8** | **-** | **-** | **0.08** | **6** | **192** | **8** | **0.57** |
| *Eastbound Left/Thru/Right* | *0.0* | *A* | *0.00* | *1.00* | *0* | *0* | *0* | *0.00* |
| *Westbound Left/Thru/Right* | *18.7* | *C* | *0.14* | *1.00* | *0* | *3* | *0* | *0.03* |
| *Northbound Left/Thru/Right* | *0.0* | *-* | *0.00* | *0.00* | *2* | *86* | *3* | *0.23* |
| *Southbound Left/Thru/Right* | *1.0* | *A* | *0.21* | *0.10* | *3* | *103* | *4* | *0.31* |
| **Spokane Avenue / 3rd Street** | **2.3** | **C** | **-** | **0.19** | **4** | **72** | **4** | **0.31** |
| *Eastbound Left/Thru/Right* | *17.6* | *C* | *0.14* | *1.00* | *0* | *2* | *0* | *0.03* |
| *Westbound Left/Thru/Right* | *20.5* | *C* | *0.21* | *1.00* | *0* | *4* | *1* | *0.04* |
| *Northbound Left/Thru/Right* | *1.7* | *A* | *0.04* | *0.15* | *2* | *38* | *2* | *0.15* |
| *Southbound Left/Thru/Right* | *0.2* | *A* | *0.17* | *0.05* | *1* | *29* | *1* | *0.10* |
| **Spokane Avenue / 4th Street** | **4.5** | **E** | **-** | **0.23** | **5** | **83** | **6** | **0.42** |
| *Eastbound Left/Thru/Right* | *19.9* | *C* | *0.24* | *1.00* | *1* | *3* | *1* | *0.05* |
| *Westbound Left/Thru/Right* | *43.1* | *E* | *0.49* | *1.00* | *1* | *6* | *1* | *0.09* |
| *Northbound Left/Thru/Right* | *2.0* | *A* | *0.06* | *0.17* | *2* | *44* | *2* | *0.17* |
| *Southbound Left/Thru/Right* | *0.2* | *A* | *0.22* | *0.05* | *1* | *31* | *1* | *0.10* |
| **Spokane Avenue / 5th Street** | **3.2** | **E** | **-** | **0.20** | **6** | **113** | **7** | **0.48** |
| *Eastbound Left/Thru/Right* | *21.2* | *C* | *0.21* | *1.00* | *0* | *3* | *1* | *0.04* |
| *Westbound Left/Thru/Right* | *38.7* | *E* | *0.37* | *1.00* | *1* | *4* | *1* | *0.06* |
| *Northbound Left/Thru/Right* | *2.1* | *A* | *0.07* | *0.19* | *3* | *74* | *4* | *0.28* |
| *Southbound Left/Thru/Right* | *0.2* | *A* | *0.23* | *0.03* | *1* | *32* | *2* | *0.11* |
| **Spokane Avenue / 6th Street** | **5.9** | **F** | **-** | **0.15** | **9** | **171** | **10** | **0.72** |
| *Eastbound Left/Thru/Right* | *20.7* | *C* | *0.28* | *1.00* | *1* | *3* | *1* | *0.06* |
| *Westbound Left/Thru/Right* | *87.5* | *F* | *0.69* | *1.00* | *2* | *5* | *2* | *0.13* |
| *Northbound Left/Thru/Right* | *0.7* | *A* | *0.02* | *0.06* | *4* | *110* | *5* | *0.36* |
| *Southbound Left/Thru/Right* | *0.2* | *A* | *0.28* | *0.04* | *2* | *53* | *2* | *0.17* |
| **Spokane Avenue / 8th Street** | **2.0** | **E** | **-** | **0.06** | **5** | **143** | **7** | **0.45** |
| *Westbound Left/Right* | *37.9* | *E* | *0.44* | *1.00* | *1* | *5* | *1* | *0.08* |
| *Northbound Thru/Right* | *0.0* | *-* | *0.33* | *0.00* | *2* | *55* | *2* | *0.15* |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Southbound Thru/Left* | *0.2* | *A* | *0.20* | *0.03* | *2* | *83* | *3* | *0.23* |
| **Spokane Avenue / 9th Street** | **0.7** | **F** | **-** | **0.01** | **3** | **80** | **3** | **0.23** |
| *Westbound Left/Right* | *52.3* | *F* | *0.21* | *1.00* | *0* | *1* | *0* | *0.02* |
| *Northbound Thru/Right* | *0.0* | *-* | *0.35* | *0.00* | *1* | *36* | *1* | *0.10* |
| *Southbound Thru/Left* | *0.0* | *-* | *0.20* | *0.00* | *1* | *43* | *2* | *0.11* |
| **Spokane Avenue / Riverside Avenue** | **0.3** | **C** | **-** | **0.02** | **6** | **188** | **7** | **0.52** |
| *Eastbound Left/Right* | *17.0* | *C* | *0.09* | *1.00* | *0* | *3* | *0* | *0.02* |
| *Northbound Thru/Right* | *0.0* | *-* | *0.36* | *0.00* | *5* | *159* | *6* | *0.42* |
| *Southbound Thru/Left* | *0.0* | *-* | *0.18* | *0.00* | *1* | *26* | *1* | *0.07* |

## Modified Alternative C (Offset) Configuration Future (2030) Conditions
## Signalized* Intersection Level of Service (PM Peak Hour)

| Intersection | Delay | LOS | v/c | Stops / Vehicle | Total Travel Time (hr) | Distance Traveled (mi) | Fuel Consumed (gal) | CO Emissions (kg) |
|---|---|---|---|---|---|---|---|---|
| **Baker Avenue / 2nd Street** | **23.3** | **C** | **0.82** | **0.67** | **28** | **214** | **32** | **2.23** |
| *Eastbound Left* | *21.6* | *C* | *0.47* | *0.75* | *2* | *10* | *2* | *0.12* |
| *Eastbound Thru/Right* | *24.5* | *C* | *0.69* | *0.76* | *5* | *36* | *6* | *0.41* |
| *Westbound Left* | *17.5* | *B* | *0.59* | *0.71* | *1* | *7* | *2* | *0.11* |
| *Westbound Thru* | *13.0* | *B* | *0.45* | *0.57* | *2* | *23* | *3* | *0.21* |
| *Westbound Right* | *9.5* | *A* | *0.36* | *0.28* | *2* | *25* | *2* | *0.14* |
| *Northbound Left* | *20.1* | *C* | *0.43* | *0.73* | *0* | *2* | *0* | *0.03* |
| *Northbound Thru/Right* | *23.0* | *C* | *0.73* | *0.76* | *5* | *40* | *6* | *0.43* |
| *Southbound Left* | *25.3* | *C* | *0.63* | *0.72* | *1* | *7* | *1* | *0.08* |
| *Southbound Thru* | *38.1* | *D* | *0.92* | *0.86* | *9* | *50* | *9* | *0.66* |
| *Southbound Right* | *14.3* | *B* | *0.16* | *0.18* | *1* | *12* | *1* | *0.06* |
| **Baker Avenue / 13th Street** | **15.6** | **B** | **0.99** | **0.37** | **18** | **335** | **25** | **1.78** |
| *Westbound Left* | *42.6* | *D* | *0.07* | *1.09* | *0* | *1* | *0* | *0.01* |
| *Westbound Right* | *78.9* | *E* | *0.21* | *0.30* | *2* | *32* | *3* | *0.19* |
| *Northbound Thru* | *3.0* | *A* | *0.39* | *0.25* | *2* | *48* | *3* | *0.23* |
| *Northbound Right* | *1.7* | *A* | *0.08* | *0.04* | *0* | *10* | *0* | *0.03* |
| *Southbound Left* | *11.6* | *B* | *0.84* | *0.56* | *9* | *145* | *13* | *0.93* |
| *Southbound Thru* | *3.4* | *A* | *0.46* | *0.27* | *4* | *99* | *6* | *0.39* |
| **Central Avenue / 2nd Street** | **16.0** | **B** | **0.74** | **0.53** | **14** | **122** | **16** | **1.12** |
| *Eastbound Left/Thru/Right* | *7.7* | *A* | *0.49* | *0.36* | *3* | *37* | *3* | *0.23* |
| *Westbound Left/Thru/Right* | *10.8* | *B* | *0.75* | *0.52* | *5* | *54* | *6* | *0.44* |
| *Northbound Left/Thru/Right* | *32.2* | *C* | *0.62* | *0.80* | *3* | *11* | *3* | *0.19* |
| *Southbound Left/Thru/Right* | *34.9* | *C* | *0.60* | *0.71* | *3* | *20* | *4* | *0.26* |
| **Spokane Avenue / 2nd Street** | **19.5** | **B** | **0.68** | **0.66** | **17** | **136** | **20** | **1.39** |
| *Eastbound Left* | *12.4* | *B* | *0.13* | *0.58* | *0* | *2* | *0* | *0.02* |
| *Eastbound Thru/Right* | *18.4* | *B* | *0.67* | *0.66* | *4* | *33* | *5* | *0.33* |
| *Westbound Left* | *16.1* | *B* | *0.23* | *0.64* | *0* | *3* | *0* | *0.03* |
| *Westbound Thru/Right* | *19.4* | *B* | *0.56* | *0.72* | *4* | *28* | *4* | *0.30* |
| *Northbound Left* | *26.4* | *C* | *0.67* | *0.78* | *3* | *19* | *4* | *0.26* |
| *Northbound Left/Thru/Right* | *20.1* | *C* | *0.56* | *0.64* | *4* | *31* | *4* | *0.29* |
| *Southbound Thru/Right* | *13.3* | *B* | *0.07* | *0.67* | *0* | *1* | *0* | *0.01* |
| *Southbound Left* | *15.3* | *B* | *0.32* | *0.51* | *2* | *19* | *2* | *0.15* |
| **Spokane Avenue / 13th Street** | **27.6** | **C** | **0.99** | **0.49** | **5062** | **3937** | **3890** | **271.94** |
| *Eastbound Left* | *10.7* | *B* | *0.11* | *0.38* | *0* | *6* | *1* | *0.04* |
| *Eastbound Thru* | *11.0* | *B* | *0.18* | *0.41* | *1* | *15* | *1* | *0.09* |
| *Eastbound Right* | *37.3* | *D* | *0.98* | *0.94* | *13* | *75* | *14* | *0.95* |
| *Westbound Left* | *18.4* | *B* | *0.59* | *0.71* | *3* | *39* | *4* | *0.28* |
| *Westbound Thru* | *12.8* | *B* | *0.13* | *0.52* | *1* | *13* | *1* | *0.07* |
| *Westbound Right* | *13.0* | *B* | *0.15* | *0.47* | *1* | *14* | *1* | *0.08* |
| *Northbound Left* | *26.6* | *C* | *0.49* | *0.76* | *1* | *8* | *1* | *0.10* |
| *Northbound Thru* | *36.6* | *D* | *0.93* | *0.86* | *17* | *109* | *23* | *1.58* |
| *Northbound Right* | *17.3* | *B* | *0.24* | *0.08* | *1* | *29* | *2* | *0.11* |
| *Southbound Left* | *-* | *-* | *-* | *0.70* | *8* | *133* | *12* | *0.81* |
| *Southbound Thru* | *20.0* | *C* | *0.50* | *0.35* | *0* | *3* | *0* | *0.01* |
| *Southbound Right* | *14.9* | *B* | *0.01* | *0.72* | *47* | *444* | *59* | *4.11* |

**Signal timing was determined by optimizing the network operation through Synchro*

## Modified Alternative C (Offset) Configuration Future (2030) Conditions
## Unsignalized Intersection Level of Service (PM Peak Hour)

| Intersection | Delay | LOS | v/c | Stops / Vehicle | Total Travel Time (hr) | Distance Traveled (mi) | Fuel Consumed (gal) | CO Emissions (kg) |
|---|---|---|---|---|---|---|---|---|
| **Baker Avenue / 3rd Street** | **132.0** | **F** | **-** | **0.35** | **72** | **123** | **57** | **3.98** |
| *Eastbound Left/Thru/Right* | *518.2* | *F* | *1.88* | *1.00* | *21* | *10* | *16* | *1.14* |
| *Westbound Left/Thru/Right* | *683.0* | *F* | *2.32* | *1.00* | *46* | *12* | *35* | *2.45* |
| *Northbound Left/Thru/Right* | *0.7* | *A* | *0.02* | *0.13* | *2* | *36* | *2* | *0.14* |
| *Southbound Left/Thru/Right* | *2.1* | *A* | *0.30* | *0.19* | *3* | *65* | *4* | *0.26* |
| **Baker Avenue / 4th Street** | **1388.1** | **F** | **-** | **0.33** | **755** | **126** | **558** | **38.97** |
| *Eastbound Left/Thru/Right* | *438.5* | *F* | *1.69* | *1.00* | *16* | *9* | *13* | *0.88* |
| *Westbound Left/Thru/Right* | *-* | *F* | *3.02* | *1.00* | *734* | *12* | *539* | *37.67* |
| *Northbound Left/Thru/Right* | *0.8* | *A* | *0.03* | *0.15* | *1* | *34* | *2* | *0.13* |
| *Southbound Left/Thru/Right* | *1.8* | *A* | *0.33* | *0.17* | *3* | *71* | *4* | *0.28* |
| **Baker Avenue / 5th Street** | **1390.4** | **F** | **-** | **0.33** | **774** | **145** | **572** | **40.01** |
| *Eastbound Left/Thru/Right* | *568.6* | *F* | *1.96* | *1.00* | *21* | *5* | *16* | *1.13* |
| *Westbound Left/Thru/Right* | *-* | *F* | *3.06* | *1.00* | *748* | *11* | *549* | *38.38* |
| *Northbound Left/Thru/Right* | *0.7* | *A* | *0.02* | *0.14* | *2* | *57* | *3* | *0.20* |
| *Southbound Left/Thru/Right* | *1.8* | *A* | *0.36* | *0.17* | *3* | *72* | *4* | *0.29* |
| **Baker Avenue / 6th Street** | **52.7** | **F** | **-** | **0.51** | **40** | **199** | **37** | **2.55** |
| *Eastbound Left/Right* | *335.3* | *F* | *1.61* | *1.00* | *32* | *22* | *25* | *1.73* |
| *Northbound Left/Thru* | *6.2* | *A* | *0.22* | *1.19* | *2* | *34* | *5* | *0.37* |
| *Southbound Thru/Right* | *0.0* | *A* | *0.42* | *0.00* | *6* | *143* | *6* | *0.45* |
| **Baker Avenue / 7th Street** | **2261.4** | **F** | **-** | **1.28** | **1766** | **167** | **1321** | **92.35** |
| *Eastbound Left/Right* | *-* | *F* | *6.54* | *1.00* | *1754* | *41* | *1291* | *90.23* |
| *Northbound Left/Thru* | *18.6* | *C* | *0.52* | *3.67* | *6* | *54* | *27* | *1.90* |
| *Southbound Thru/Right* | *0.0* | *A* | *0.46* | *0.00* | *3* | *72* | *3* | *0.22* |
| **Baker Avenue / 8th Street** | **31.0** | **F** | **-** | **0.80** | **30** | **252** | **42** | **2.91** |
| *Eastbound Left/Right* | *371.0* | *F* | *1.62* | *1.00* | *21* | *13* | *16* | *1.12* |
| *Northbound Left/Thru* | *10.8* | *B* | *0.27* | *2.15* | *7* | *134* | *22* | *1.51* |
| *Southbound Thru/Right* | *0.0* | *A* | *0.62* | *0.00* | *3* | *105* | *4* | *0.28* |
| **Baker Avenue / 10th Street** | **49.0** | **F** | **-** | **0.45** | **47** | **389** | **50** | **3.48** |
| *Eastbound Left/Thru/Right* | *0.0* | *A* | *0.00* | *1.00* | *0* | *0* | *0* | *0.00* |
| *Westbound Left/Thru/Right* | *809.4* | *F* | *2.49* | *1.00* | *35* | *13* | *27* | *1.85* |
| *Northbound Left/Thru/Right* | *1.3* | *A* | *0.03* | *0.26* | *4* | *132* | *7* | *0.48* |
| *Southbound Left/Thru/Right* | *4.8* | *A* | *0.49* | *0.50* | *8* | *245* | *16* | *1.14* |
| **Spokane Avenue / 3rd Street** | **14.7** | **F** | **-** | **0.35** | **10** | **95** | **10** | **0.72** |
| *Eastbound Left/Thru/Right* | *80.2* | *F* | *0.84* | *1.00* | *3* | *7* | *3* | *0.22* |
| *Westbound Left/Thru/Right* | *72.1* | *F* | *0.73* | *1.00* | *2* | *7* | *2* | *0.10* |
| *Northbound Left/Thru/Right* | *3.1* | *A* | *0.10* | *0.26* | *3* | *55* | *3* | *0.24* |
| *Southbound Left/Thru/Right* | *0.5* | *A* | *0.24* | *0.09* | *1* | *26* | *1* | *0.09* |
| **Spokane Avenue / 4th Street** | **1837.6** | **F** | **-** | **0.38** | **958** | **123** | **707** | **49.41** |
| *Eastbound Left/Thru/Right* | *-* | *F* | *6.52* | *1.00* | *406* | *7* | *298* | *20.84* |
| *Westbound Left/Thru/Right* | *-* | *F* | *4.33* | *1.00* | *548* | *1* | *402* | *28.13* |
| *Northbound Left/Thru/Right* | *3.5* | *A* | *0.14* | *0.28* | *3* | *73* | *5* | *0.33* |
| *Southbound Left/Thru/Right* | *0.6* | *A* | *0.38* | *0.12* | *1* | *30* | *2* | *0.11* |
| **Spokane Avenue / 5th Street** | **114.6** | **F** | **-** | **0.36** | **71** | **177** | **58** | **4.02** |
| *Eastbound Left/Thru/Right* | *957.6* | *F* | *2.73* | *1.00* | *33* | *6* | *25* | *1.74* |
| *Westbound Left/Thru/Right* | *1032.6* | *F* | *2.82* | *1.00* | *30* | *7* | *23* | *1.59* |
| *Northbound Left/Thru/Right* | *3.8* | *A* | *0.16* | *0.36* | *6* | *130* | *8* | *0.56* |
| *Southbound Left/Thru/Right* | *0.5* | *A* | *0.39* | *0.10* | *1* | *34* | *2* | *0.12* |
| **Spokane Avenue / 6th Street** | **576.5** | **F** | **-** | **0.36** | **388** | **281** | **292** | **20.43** |
| *Eastbound Left/Thru/Right* | *539.7* | *F* | *1.94* | *1.00* | *24* | *6* | *18* | *1.28* |
| *Westbound Left/Thru/Right* | *-* | *F* | *12.48* | *1.00* | *353* | *9* | *259* | *18.13* |
| *Northbound Left/Thru/Right* | *3.9* | *A* | *0.17* | *0.37* | *9* | *209* | *12* | *0.85* |
| *Southbound Left/Thru/Right* | *0.0* | *A* | *0.48* | *0.00* | *2* | *57* | *3* | *0.18* |
| **Spokane Avenue / 8th Street** | **10.5** | **F** | **-** | **0.21** | **13** | **209** | **16** | **1.14** |
| *Westbound Left/Right* | *158.5* | *F* | *1.08* | *1.00* | *7* | *10* | *6* | *0.39* |
| *Northbound Thru/Right* | *0.0* | *A* | *0.59* | *0.00* | *3* | *99* | *4* | *0.26* |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Southbound Thru/Left* | *2.5* | *A* | *0.34* | *0.49* | *3* | *101* | *7* | *0.48* |
| **Spokane Avenue / 9th Street** | **6.0** | **F** | **-** | **0.01** | **7** | **112** | **7** | **0.49** |
| *Westbound Left/Right* | *778.3* | *F* | *1.38* | *1.00* | *4* | *1* | *3* | *0.20* |
| *Northbound Thru/Right* | *0.0* | *A* | *0.62* | *0.00* | *2* | *62* | *2* | *0.16* |
| *Southbound Thru/Left* | *0.0* | *A* | *0.32* | *0.00* | *1* | *49* | *2* | *0.13* |
| **Spokane Avenue / Riverside Avenue** | **0.4** | **B** | **-** | **0.06** | **9** | **290** | **12** | **0.84** |
| *Eastbound Left/Right* | *10.5* | *B* | *0.05* | *1.00* | *0* | *3* | *0* | *0.02* |
| *Northbound Thru/Right* | *0.0* | *A* | *0.56* | *0.00* | *7* | *257* | *10* | *0.68* |
| *Southbound Thru/Left* | *0.7* | *A* | *0.30* | *0.13* | *1* | *30* | *2* | *0.14* |

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# APPENDIX E:
# Planning Level Cost Estimates for Corridor Improvements Associated with the Configurations of Interest

# APPENDIX E: Planning Level Cost Estimates for Corridor Improvements Associated with the Configurations of Interest

## CONTRA-FLOW CONFIGURATION

### Total Estimated Construction Costs for Corridor Improvements

| Contra-Flow Configuration Improvements | Current Cost (in millions) |
|---|---|
| 1. 2nd Street Improvements and Signal Upgrades | $2.02 |
| 2. Add Capacity to the Baker Avenue Bridge | $1.45 |
| 3. Baker Avenue Reconstruction/Upgrades | $2.07 |
| 4. 7th Street Bridge and 7th Street Connection | $11.22 |
| 5. Spokane Avenue Reconstruction/Upgrades* | $4.05 |
| **TOTAL** | **$20.81M** |

* Does not include a bridge on Spokane Avenues at Whitefish River Crossing

### 1. 2nd Street Improvements and Signal Upgrades

| Cost Item | | Estimated Cost (2010) |
|---|---|---|
| Road Surface (Assumes Pavement Reconstruction) | | $120,200 |
| Curb and Gutter | | $25,000 |
| Sidewalk and Landscaping | | $99,500 |
| Drainage/Utilities | | $109,700 |
| Traffic Signals and Electrical | | $922,500 |
| Signing and Striping | | $16,700 |
| Right-of-Way (SW/SE corners at 2nd Street and Baker Avenue and SE corner of 2nd Street and Spokane Avenue) | | $43,500 |
| Traffic Control | | $12,300 |
| **SUBTOTAL** | | $1,349,400 |
| Mobilization and Contingencies (50%) | | 674,700 |
| **TOTAL ESTIMATED COST** | | **$2,024,100** |

### 2. Add Capacity to the Baker Avenue Bridge

| Cost Item | | Estimated Cost (2010) |
|---|---|---|
| Whitefish River Bridge (56 feet wide x 115 feet long) | | $966,000 |
| **SUBTOTAL** | | 966,000 |
| Mobilization and Contingencies (50%) | | 483,000 |
| **TOTAL ESTIMATED COST** | | **$1,449,000** |

## 3. Baker Avenue Reconstruction/Upgrades

Baker Avenue (2nd Street to 7th Street)

| Cost Item | | Estimated Cost (2009) |
|---|---|---|
| Road Surface | | $342,500 |
| Curb and Gutter | | $65,500 |
| Sidewalk and Landscaping | | $135,100 |
| Drainage/Utilities | | $287,500 |
| Traffic Signals at 7th Street and Electrical | | $358,900 |
| Signing and Striping | | $43,700 |
| Right-of-Way | | $114,000 |
| Traffic Control | | $32,300 |
| **SUBTOTAL** | | $1,379,500 |
| Mobilization and Contingencies (50%) | | 689,750 |
| **TOTAL ESTIMATED COST** | | **$2,069,250** |

## 4. 7th Street Bridge and 7th Street Connection

| Cost Item | | Estimated Cost (2010) |
|---|---|---|
| Road Surface Costs | | 142,000 |
| Curb and Gutter | | 33,500 |
| Drainage/Utilities | | 183700 |
| Signing and Striping | | 22,400 |
| Sidewalks and Landscaping | | 112,100 |
| Bridge | | 6,882,700 |
| Electrical | | 30,100 |
| Traffic Signals (attributed to Spokane and Baker Avenue costs) | | 0 |
| Right-of-Way | | 58,300 |
| Traffic Control | | 16,500 |
| **SUBTOTAL** | | 7,481,300 |
| Mobilization and Contingencies (50%) | | 3,740,700 |
| **TOTAL COST** | | 11,222,000 |

## 5. Estimated Costs for Spokane Avenue Improvements*

| Cost Item | | Estimated Cost (2010) |
|---|---|---|
| Road Surface Costs | | $700,100 |
| Curb and Gutter | | 125,300 |
| Drainage/Utilities | | 609,900 |
| Signing and Striping | | 83,600 |
| Sidewalks and Landscaping | | 154,100 |
| Medians/dedicated left turn lanes for northbound traffic between 8th and 13th Streets | | 35,800 |
| Electrical | | 112,700 |
| Traffic Signal Modifications at 13th Street and New Signal at 7th Street | | 600,000 |
| Right-of-Way | | 218,100 |
| Traffic Control | | 61,800 |
| **SUBTOTAL** | | $2,701,400 |
| Mobilization and Contingencies (50%) | | 1,350,700 |
| **TOTAL COST** | | **$4,052,100** |

* Does not include a bridge on Spokane Avenues at Whitefish River Crossing

# MODIFIED ALTERNATIVE C (OFFSET) CONFIGURATION

## Total Estimated Construction Costs for Corridor Improvements

| Modified Alternative C (Offset) Improvements | Current Cost (in millions) |
|---|---|
| 1. 2nd Street Improvements and Signal Upgrades | $2.02 |
| 2. Add Capacity to the Baker Avenue Bridge | $1.45 |
| 3. Baker Avenue and 13th Reconstruction and Upgrades | |
| 3A. Baker Avenue Improvements | $3.42 |
| 3B. 13th Street Improvements | $0.37 |
| 4. Spokane Avenue Reconstruction/Upgrades* | $3.60 |
| **TOTAL** | **$10.86 M** |

* Does not include a bridge on Spokane Avenues at Whitefish River Crossing

## 1. Estimated Costs for 2nd Street Improvements

| Cost Item | | Estimated Cost (2010) |
|---|---|---|
| Road Surface (Assumes Pavement Reconstruction) | | $120,200 |
| Curb and Gutter | | $25,000 |
| Sidewalk and Landscaping | | $99,500 |
| Drainage/Utilities | | $109,700 |
| Traffic Signals and Electrical Work | | $922,500 |
| Signing and Striping | | $16,700 |
| Right-of-Way (SW/SE corners at 2nd Street and Baker Avenue and SE corner of 2nd Street and Spokane Avenue) | | $43,500 |
| Traffic Control | | $12,300 |
| **SUBTOTAL** | | $1,349,400 |
| Mobilization and Contingencies (50%) | | 674,700 |
| **TOTAL ESTIMATED COST** | | **$2,024,100** |

## 2. Add Capacity to the Baker Avenue Bridge

| Cost Item | | Estimated Cost (2010) |
|---|---|---|
| Whitefish River Bridge (56 feet wide x 115 feet long) | | $966,000 |
| **SUBTOTAL** | | 966,000 |
| Mobilization and Contingencies (50%) | | 674,700 |
| **TOTAL ESTIMATED COST** | | **$1,449,000** |

## 3. Baker Avenue and 13th Reconstruction and Upgrades

### 3A. Estimated Costs for Baker Avenue (2nd to 13th Streets)

| Cost Item | | Estimated Cost (2010) |
|---|---|---|
| Road Surface Costs | | $626,600 |
| Curb and Gutter | | 126,700 |
| Drainage/Utilities | | 566,600 |
| Signing and Striping | | 84,500 |
| Sidewalks and Landscaping | | 261,400 |
| Electrical | | 113,900 |
| Traffic Signal at Baker and 13th | | 300,000 |
| Right-of-Way | | 138,600 |
| Traffic Control | | 62,500 |
| **SUBTOTAL** | | $2,280,800 |
| Mobilization and Contingencies (50%) | | 1,140,400 |
| **TOTAL COST** | | **$3,421,200** |

### 3B. Estimated Costs for 13th Street Improvements (Spokane Avenue to Baker Avenue)

| Cost Item | | Estimated Cost (2010) |
|---|---|---|
| Reconstruct Road Surface with Minor Widening | | $74,600 |
| Curb and Gutter | | 15,500 |
| Drainage/Utilities | | 68,300 |
| Signing and Striping | | 10,300 |
| Sidewalks | | 29,800 |
| Electrical | | 13,900 |
| Right-of-Way | | 27,000 |
| Traffic Control | | 7,600 |
| **SUBTOTAL** | | $247,000 |
| Mobilization and Contingencies (50%) | | 123,500 |
| **TOTAL COST** | | **$370,500** |

## 4. Estimated Costs for Spokane Avenue Improvements*

| Cost Item | | Estimated Cost (2010) |
|---|---|---|
| Road Surface Costs | | $700,100 |
| Curb and Gutter | | 125,300 |
| Drainage/Utilities | | 609,900 |
| Signing and Striping | | 83,600 |
| Sidewalks and Landscaping | | 154,100 |
| Medians/dedicated left turn lanes for northbound traffic between 8th and 13th Streets | | 35,800 |
| Electrical | | 112,700 |
| Traffic Signal Modifications | | 300,000 |
| Right-of-Way | | 218,100 |
| Traffic Control | | 61,800 |
| **SUBTOTAL** | | $2,401,400 |
| Mobilization and Contingencies (50%) | | 1,200,700 |
| **TOTAL COST** | | **$3,602,100** |

* Does not include a bridge on Spokane Avenues at Whitefish River Crossing

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