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 configurations and other strategies will be evaluated through a screening process based on the needs and goals 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 Improvement Options

The purpose and need for undertaking improvement options 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 improvement options to US 93 should:

- Improve the operation and efficiency of the facility by incorporating measures to enhance traffic flows and better manage truck traffic in the corridor;
- Incorporate physical changes to the roadway and its adjoining environment so the facility complies with MDT's geometric design criteria for Urban Principal Arterials;
- Reduce opportunities for traffic conflicts and crashes associated with turning movements at major intersections and other corridor locations;
- Provide a transportation facility that meets current and future demands;
- Provide facility improvements that consider recommendations made in the City's Policies and Plans; 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 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 address identified needs within the corridor.

The 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

No Action Configuration

Alternative A (4-Lane) Configuration

Alternative C (Couplet 1) Configuration

Alternative C (Couplet 2) Configuration

Record of Decision Preferred Configuration (Couplet 3)

Alternative C (Couplet 4) Configuration

Alternative C (Offset) Configuration

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 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.

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 should 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) Alternative C (Couplet 1) Alternative C (Couplet 2) **Alternative C (Couplet 3) – FEIS/ROD PREFERRED ALTERNATIVE** Alternative C (Couplet 4) Alternative C (Offset)	Revisit Western Route Alternates (FEIS Bypass Alternatives A - D) Revisit Transportation Demand Management (TDM) Revisit Transportation System Management (TSM) Revisit Transit Improvements Intelligent Transportation System (ITS) Strategies

5.2.5 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 identified capacity and geometric needs and changed conditions in the community. These configurations, 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 configurations 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 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-lane 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.

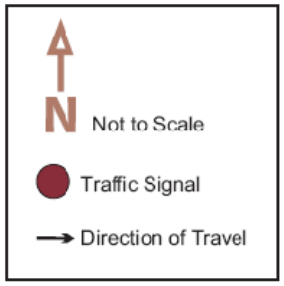
FIGURE 5-2: Design Configurations Proposed After the FEIS/ROD

Modified Record of Decision Configuration

Contra-Flow Configuration

Truck Route Configuration

Downtown Master Plan Configuration



5.2.6 Consideration of Additional New 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" configurations are proposed for the Whitefish Urban corridor.

The improvement 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 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 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 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 configurations have been developed that attempt to do this—notably the Truck Route Configuration and other improvement 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.

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

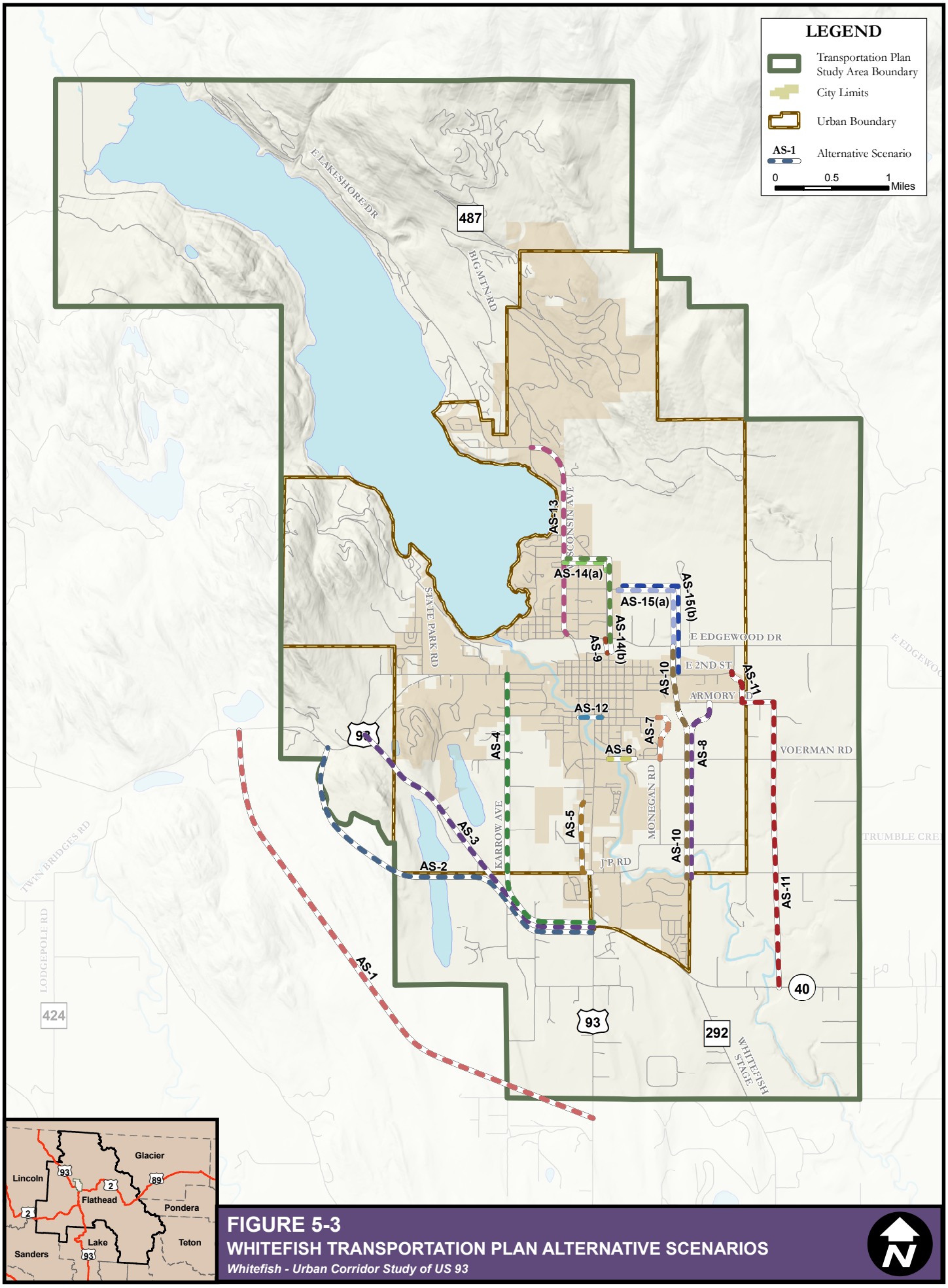


FIGURE 5-3
WHITEFISH TRANSPORTATION PLAN ALTERNATIVE SCENARIOS
Whitefish - Urban Corridor Study of US 93

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 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 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

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