Feasibility Report on Proposed Amtrak Services in Southern Montana

August 2010

Prepared by
Amtrak
For
Montana Department of Transportation
Rail, Transit and Planning Division
Multimodal Programs Bureau

MONTANA MDT DEPARTMENT OF TRANSPORTATION

AMTRAK

Feasibility Report of Proposed Amtrak Service in Montana

Prepared by Amtrak for the Montana Department of Transportation

In March of 2008, the National Railroad Passenger Corporation (Amtrak) was enlisted to provide a feasibility study to the Montana Department of Transportation (MDT) on the potential intercity passenger rail service through the southern part of Montana. The study was completed in April 2010.

Two scenarios were examined; the first is the Sandpoint, ID to Williston, ND "order of magnitude" study of the capital infrastructure investments that would be needed on this route segment to meet future passenger rail needs and the operating needs of the host railroads. This part of Amtrak's analysis did not include any ridership forecast or schedule development or financial analysis of the cost for the capital infrastructure improvements that would be needed.

The second scenario is a more detailed analysis of service between Billings and Missoula, MT. This included a complete route inspection, the development of an "order of magnitude" capital cost investment, review of the host railroad operations and the development of a passenger service schedule recommendations, revenue/ridership forecast and estimated start-up costs and annual operating expenses for this dedicated state route. The costs estimates listed in the Billings to Missoula study are based on 2009 costs. Other items that could increase costs include safety features and positive train control (PTC) required for passenger rail service. Not a part of the study is the how the estimated start-up and operational costs might be shared between partners in the project.

Although the study provided a proposed route and potential rail station locations, the sites chosen were included primarily to present a realistic analysis of potential schedules and ridership forecasts along Montana's most populous part of the southern passenger rail route. The report emphasizes that stations would need to meet current requirements for passenger rail service, which would include appropriate platforms, the stations in a state of good repair, and in compliance with federal ADA requirements. Station capital costs to implement passenger service were not developed for this study, as those costs are dependent on many factors that were not examined for this level of effort. A determination of station operating costs could be developed after the investment is made in the station stops to bring them up to the level required to provide Amtrak passenger rail service.

The Feasibility Report of Proposed Amtrak Service in Montana is part of an ongoing information gathering process to inform policy makers and citizens of about what it would take to reestablish and sustain passenger rail service in southern Montana.

Route Assessment

Williston, North Dakota – Sandpoint, Idaho

Prepared By:

M.W. Franke
Assistant Vice President - Policy and Development

B. E. Hillblom
Senior Director – State Partnerships

R. P. Hoffman
Principal Officer – Corridor Planning

Amtrak
Chicago, Illinois
May 17, 2010

Route Assessment Report

Williston, North Dakota – Sandpoint, Idaho

Table of Contents

Route Assessment Report

Williston, North Dakota – Sandpoint, Idaho

I. Introduction and Background

I.A. General Discussion

The Montana Department of Transportation (MDT) formally requested Amtrak to provide assistance in preparing a feasibility study of potential intercity passenger rail service through the southern part of Montana. MDT's request states that it is seeking to provide practical information to state decision-makers on the capital and operating costs of passenger rail service to inform their constituents of state investments that would be necessary to begin and sustain such service. To provide MDT with the requested information, Amtrak used various references as listed in Exhibit 5 and conducted a two-part study of the feasibility of intercity passenger rail service as follows:

Sandpoint, ID - Williston, N.D.

Amtrak made a high-level assessment of the capital infrastructure improvements necessary on this route segment to meet both the requirements of future passenger service and the operating needs of the host railroads. Amtrak was requested by MDT to accomplish this assessment through limited sample route inspections and from input and information provided by the host railroads. No additional analysis or other financial information was requested or has been provided for this portion of the study, and no ridership forecasts or schedule development was required or provided. This report covers the longer Sandpoint, ID - Williston, N.D. portion of the study requested by MDT.

Billings, MT - Missoula, MT

In addition to its Sandpoint, ID – Williston, ND assessment, Amtrak was requested to conduct a more detailed analysis of the Billings, MT - Missoula, MT segment, to include a complete route inspection, development of "order of magnitude" capital investments, review of host freight railroad operations, and development of passenger service schedule recommendations, revenue/ridership forecasts, one time start-up costs (rolling stock, employee-related hiring and training, etc.), equipment servicing facility requirements, station needs, estimated annual operating expenses, and state support requirements.

Prior Amtrak Service On The Route Under Study

In June 1971, Amtrak began operating a tri-weekly section of the Chicago to Seattle *Empire Builder* over the former Northern Pacific Railroad line, then owned by the Burlington Northern Railroad, between Minneapolis/St. Paul, Minnesota and Spokane,

Washington via southern Montana. Later, the *North Coast Hiawatha* became a separate Chicago-to-Seattle train, operating on a variety of schedules on either a daily or tri-weekly basis until it was discontinued on October 1, 1979. Prior to its discontinuance, the *North Coast Hiawatha* operated via Butte and Deer Lodge, Montana. All rail operations on a portion of this segment have long ceased due to minimal freight traffic volume, resulting in the proposed new routing through Helena, Montana. While northern Montana is still served by Amtrak's *Empire Builder*, the southern part of the state has not seen Amtrak service since 1979.

Route Studied

The area along the nearly 893.0 mile route between Williston, ND and Sandpoint, ID (Exhibit 1) includes a diverse set of communities. Billings, Montana's largest city with a population of 103,994, as well as several other locations along the route, have experienced double digit percentage population growth since the year 2000. For example, from 2000 to 2008 the population of Bozeman, the fastest-growing city in the state, has increased an estimated 43% to approximately 39,442. The total population in the counties served by the proposed corridor is approximately 526,753 as shown in Exhibit 3.

To provide a general outline of the route, highlights of the cities/towns once served by Amtrak's North Coast Hiawatha route are featured in the table that follows:

Selected route photos are shown in Exhibit 6

Route Profile

Proposed Station Stops	2008 Population	Brief Highlights
Williston, ND	12,641	The home of Williston State College, it is near the confluence of the Yellowstone and Missouri Rivers at the upper end of Lake Sakakawea reservoir.
Sidney, MT	4,782	Located along the Yellowstone River, it is near the Dakota Badlands, named for the rugged terrain and jagged rock formations.
Glendive, MT	4,585	Also located between the Yellowstone River and the Badlands, it is an agricultural hub and is near Makoshika State Park, famous for significant discoveries of dinosaur bones and prehistoric fossils.
Miles City, MT	8,102	Located among alkali buttes, sandstone bluffs and grassy slopes, it is at the confluence of the Tongue and Yellowstone Rivers and it serves as a center for commerce and regional services.
Forsyth, MT	1,857	It is reported to be the first settlement along the

		Yellowstone River. Like many areas in Montana, Forsyth is a destination area for hunting, fishing and rock collecting. It is famous for its three-story County Courthouse Building.
Billings, MT	103,994	Montana's largest city, it is a major business, cultural and educational center, the site of four college campuses, the location of numerous corporate headquarters, and it hosts a number of museums.
Livingston, MT	7,500	It serves as a gateway to Yellowstone National Park whose north entrance is located 54 miles south of the Montana Rail Link route. The park features dramatic lake views, canyons, rivers, mountain ranges and geysers. It attracts approximately 3 million visitors each year.
Bozeman, MT	39,442	Home to Montana State University, with a student population of 14,000, it features several museums, is the location of numerous tech companies, and is in a very scenic area surrounded by four mountain ranges.
Helena, MT	29,351	It is the **Montana State Capital** and home to two colleges, several museums and many cultural attractions, and is near the Missouri River with its large reservoir and many lakes approximately 20 miles west of Helena. The route crosses the Continental Divide at Blossburg, Montana at a 5,400 foot elevation through the 3,900 foot-long Mullin Tunnel.
Missoula, MT	68,202	Located near the confluence of the Clark Fork and Bitteroot Rivers, it is near the Flathead Indian Reservation and is the home of the University of Montana with a student population of nearly 14,000.
Paradise, MT	197	A very small community located along the Clark Fork River. It is known for its resorts and cabins in beautiful lake settings.
Sandpoint, ID	8,337	It is located in close proximity to Lake Pend Oreille and has become widely recognized for tourism and its vibrant visual and performance arts offerings.

Other Transportation Modes Along Route

Many communities on the route are served by interstate highways and have intercity bus and/or airline service. However, public transportation alternatives are limited: airlines service to on-route communities is expensive and in many cases circuitous; bus travel between many points requires one or more transfers; and travel by all non-rail modes is impaired by the often severe winter weather conditions along the route.

1. Automobiles

   With few exceptions, the route is paralleled by interstate highways, primarily interstates 90 and 94. Highway distances are generally comparable to distances via the rail route. Significant portions of the parallel inter-state highway segments in North Dakota and Montana have 75 mph speed limits, which gives highway travel a time advantage over travel by train that, particularly for longer trips, can be partially offset by the need to make rest stops. Long driving distances and the often severe winter weather in the Northern Plains Region that the route traverses, present challenges to driving, particularly for older or mobility-limited travelers.

2. Bus/Motor Coach

   While most of the route between Williston and Sandpoint has parallel intercity bus service, there are gaps where bus routes diverge from the rail line. Through-bus service along the route is not available, which means that longer trips generally require one or more bus changes. During winter months, the reliability and availability of bus service is impacted by weather conditions.

3. Airline

   The route could service several communities that do not have Amtrak service today. Some of these communities do not have scheduled airline service. Others have only federally-subsidized "Essential Air Service" provided by small aircraft. The largest cities along the route have regional jet or mid-sized plane service to major airline hubs such as Minneapolis or Seattle. However, limited airline competition results in high airfares and circuitous routes. Minimal direct airline service is available between North Dakota/Montana cities. For example, a traveler wishing to fly from Missoula to Billings, (a 358-mile trip by rail) must take a circuitous, two plane route through Seattle, Denver, or Salt Lake City. As a result, in some cases, air travel is not much faster than rail.

I.A.1 Study Process Outline

Following receipt by Amtrak of the study request, a physical evaluation of the majority of the Williston – Sandpoint route was conducted with representatives of the host carriers including, in most cases, hi-rail inspections, to assess general infrastructure conditions. Also identified during discussions with the host railroads were operational challenges on this route. The specific infrastructure improvements and other railroad-related comments in this report have not been negotiated, or agreed to, with the host railroad and reflect only the findings and best judgment recommendations of the study team. Should further progression of this analysis or an alternate be desired by MDT, detailed discussions and formal negotiations will have to be initiated with the host railroads.

If and when passenger service is funded by the MDT in the future, it is recommended that another inspection of the route be conducted to update the infrastructure assessment. Such an update would help ascertain whether any operational or freight traffic volume changes would warrant a revision of the foregoing scope of infrastructure work, or in the event ongoing maintenance work or track degradation has occurred and changed the level of required track rehabilitation.

A listing of acronyms/definitions is shown in Exhibit 4

I.A.2. Operational Route Description, Williston, ND – Sandpoint, ID

The entire route operates over three railroads as follows:

Route Segment	Railroad	Segment Length
Williston - Snowden	BNSF (1)	26.1
Snowden - Glendive	YSVR (2)	72.6
Glendive - Jones Jct.	BNSF (1)	212.7
Jones Jct - Sandpoint	MRL (3)	581.2
	Total Route	892.6

(1) BNSF: Burlington Northern Santa Fe
(2) YSVR: Yellowstone Valley Railroad
(3) MRL: Montana Rail Link

Williston, North Dakota – Snowden, Montana (26.1 miles)
Host Railroad: BNSF

Rail traffic between Williston, North Dakota and Snowden, Montana averages 27 trains per day. The daily Amtrak *Empire Builder*, as well as frequent intermodal and grain trains, contribute to the high traffic level on this Centralized Traffic Control (CTC) governed route segment. Maximum speed on this segment is 79 mph. With the exception of several miles of multiple main track territory outside of Williston, the route is single track with one intermediate 15,021 foot long siding. There are 27 curves along the segment, with the tightest being a 2° 47’ curve.

Snowden, Montana – Glendive, Montana (72.6 miles)
Host Railroad: YSVR

Track Warrant Control (TWC) is utilized to control operations on approximately 62 miles of this segment. The remaining 10.6 miles of this segment are under Restricted Limits. The entire segment is non-signaled (dark territory) and is single track with no designated sidings. Depending on the day of the week, there are between 1 and 3 trains per day on this route segment. Maximum authorized speed over the entire route is 25 mph. There are a total of 41 curves with the tightest curve being 7°30' near Glendive.

Glendive Montana – Jones Junction, Montana (212.7 miles)
Host Railroad: BNSF

Operation on a 180.9 mile portion of the Glendive to Jones Junction segment is controlled by Track Warrant Control (TWC) and Automatic Block Signals (ABS). Of the remaining 31.8 miles on the segment, 29 miles are controlled by CTC and 2.8 miles are controlled under yard limit rules. Between 19 and 21 trains operate on this route segment per day. This route segment is single track with 14 sidings of average length of 7,469 feet, with an average spacing of 14.4 miles. Maximum speed is 60 mph. There are 203 curves along the route, with the tightest curve being 4° 30".

Jones Junction, Montana – Spurling, Montana (33.6 miles)
Host Railroad: MRL

On this segment, there are two sidings (10,697 and 14,758 feet in length). The majority of the 33.6 miles of main line between Jones Junction and Spurling is double track. 17.1 miles of the segment are controlled by CTC, while 13.9 miles are controlled by TWC and ABS and the 2.6 miles through the Laurel yard area are governed by yard limit rules. Typically there are 7 trains per day on this segment. The maximum speed on the route is 60 mph. The largest yard on the MRL is located on this segment at Laurel, where MRL's east - west mainline intersects with a BNSF north-south line. All freight trains stop at Laurel to change crews and many MRL trains pick-up or set off cars. Up to six trains can be switched simultaneously in this 1,200 car per day, round the clock facility. It is not uncommon for several trains to wait for handling outside of the Laurel yard, occupying the main line tracks, and preventing other trains from passing. The Laurel yard currently does not have a signaled main line, therefore all trains traveling through the yard must use a non-signaled yard track, necessitating slow-speed movements.

Spurling, Montana – Helena, Montana (221 miles)
Host Railroad: MRL

West of Spurling, the route passes through Livingston and Bozeman on the way to Helena. It is controlled entirely by CTC, with yard limits rules in effect for several miles in Livingston and Helena. The line from Spurling to Helena is single track, including 23 sidings, with an average length of 8,600 feet and average spacing of 9.5 miles. From Spurling to Livingston, the curves are infrequent and maximum authorized speed is 60 mph. West of Livingston, the route begins with a 13 mile long, 1.8% grade ascent of Bozeman Pass. Maximum authorized speed is 30 mph near the crest of the grade. After passing through the 3,015 foot long Bozeman Pass Tunnel, the track crosses the summit of the pass at 5,562 feet above sea level. At this point the track descends at a maximum grade of 1.9%. This is an extremely scenic area. There are a number of sharp curves in the first few miles of the descent, restricting maximum speed until reaching Bozeman. West of Bozeman, there is a 13.3 mile stretch of straight track with 60 mph maximum authorized speed. On the route segment paralleling the Missouri River, maximum speed is 25 mph for about nine miles. This segment features frequent sharp curves that prohibit faster operations. Westward from Lombard, curves are less frequent and maximum authorized speed increases again to 60 mph. Although grain and other products move over this segment, traffic is predominately composed of unit coal trains originating in the Powder River Basin that are received daily from the BNSF and destined to west coast ports for export. Total train volume averages 10-12 trains per day.

There are several challenging aspects of this segment including 258 curves, some of them up to 10 degrees in sharpness, the mountain passes with a 1.9% grade between Bozeman and Livingston, a river grade canyon with high degree curves, and slow track between Logan and Toston, a 1% grade between Townsend and Winston and, of course, recurring extreme cold winter weather.

Helena, Montana - Missoula, Montana (120 miles)
Host Railroad: MRL

Except for approximately 5 miles of double main track, the 120 mile segment from Helena to Missoula is single track operated generally under CTC control. There are eleven sidings on this route segment, with an average length of approximately 9,900 feet, and average spacing between sidings of about 9.5 miles. To the west of Helena, the track ascends a nearly 17 mile-long grade of 2.2%. On the ascent, there are several sharp curves with corresponding speeds as low as 20 mph. After passing through the 3,896 foot long Mullan Tunnel, the track reaches the summit of the grade and crosses the Continental Divide at 5,400 feet above sea level. The track descends from the summit with a 1.4% grade on the west slope and maximum authorized speeds as low as 35 mph. On the remainder of the route into Missoula, curves are less frequent and the maximum authorized speed is generally 60 mph. Before reaching Missoula, the route passes through the Garrison, Nimrod, and Bonita tunnels which are 1,394, 909, and 896 feet in length, respectively. An average of 10-12 freight trains per day, operate between Billings

and Missoula. The majority of the traffic, 6-7 trains per day, is general merchandise freight. In addition, there are usually several coal and grain movements each day. Loaded coal traffic typically moves westbound in unit trains while empty coal cars move eastbound.

The segment has its share of challenges, with 152 curves, some up to 10 degrees in sharpness, a 2.2% mountain pass with high degree curves, and slow track limited to a 20 mph maximum authorized speed from Austin to Blossburg.

Missoula, Montana – Sandpoint, Idaho (206.6 miles)
Host Railroad: MRL

For the first few miles of track in Missoula, the main track is governed by TWC and ABS. Beginning at West Missoula, the route enters a 3 mile segment of multiple main track controlled by CTC. From DeSmet to Sandpoint, the route is single track governed by TWC. There is no wayside signal system on this route segment. There are three sidings between DeSmet and Paradise, with an average siding length of 3,350 feet and an average spacing of 16.1 miles. The segment from Paradise to Sandpoint is governed by CTC. Including the siding at Paradise, there are 11 sidings with an average length 11,177 feet and average spacing of 10.8 miles. There are 310 curves on the route between Missoula and Sandpoint. Several of these curves reach 10° in sharpness. The maximum operating speed between Missoula and Sandpoint is 60 mph. Traffic volume on this segment is heaviest between Missoula and DeSmet, Montana at about 15-16 trains per day. The volume drops to 9 to 10 trains per day between Thompson Falls, Montana and Sandpoint, Idaho.

Logan – Butte - Deer Lodge - Garrison Route

Amtrak's former Chicago – Seattle North Coast Hiawatha train (last operated in 1979) operated on the Logan – Butte – Deer Lodge – Garrison route. This study proposes the use of the Logan – Helena – Garrison route segment. Use of the former route would require major infrastructure investments by both the MRL and BNSF railroads to bring the segment to a safe and practical condition for passenger service. A brief description of the formerly-used route segments as they are today follows, and a map of both the former and proposed segments is shown in Exhibit 2.

The distances on this route break down as follows:

Logan – Spire Rock	(51 miles)
Spire Rock – Butte	(19.5 miles)
Butte – Garrison	(51 miles)

The Logan to Spire Rock segment is owned by MRL. It operates daily local trains to Sappington, a twice a week train to Whitehall, and trains bring rock ballast out of the Spire Rock area as needed. The segment is non-signalized and is mostly 35 and 40 mph, with some 10 and 25 mph portions. Rail weights vary from 100# to 132# and the steepest grade on the segment is 2.2% between mile post 42.3 and 51.0.

The Spire Rock to Butte segment is owned by BNSF. It is out of service and mothballed and has not been operated for over 20 years. There is severe track, roadbed, and sub-grade erosion in several places, general track condition is poor, there are two tunnels that need to be rehabilitated, and several bridges need to be rebuilt. There are many curves on the segment, including some of 12 degrees. The steepest grade on the segment is 2.2% and the elevation reaches 6,332 ft at Homestake.

The Butte to Garrison segment is owned by BNSF. Freight service is currently operated locally Butte – Garrison – Butte, 5 days per week. The segment is not signalized, has no sidings and has a maximum operating speed of 25 mph. The track is mostly 100# and 115# rail, with heavier sections of 132# rail in the areas where there are numerous curves.

I.B. Station Facilities

I.B.1. General Discussion

For purposes of this study, it is assumed that all new station facilities will be provided by parties other than Amtrak, including platforms, parking lots, and waiting areas. The assumption is that local communities desiring a station stop will provide such facilities, as well as ongoing maintenance, snow and ice removal, and janitorial services.

Whether Amtrak uses the existing station structures or new ones, it must be ensured that they are in a state of good repair and are compliant with the Americans with Disabilities Act of 1990 (ADA) before service is initiated to these communities. Amtrak has developed an extensive process for assessing and determining work necessary to develop or restore stations. This process allows Amtrak to ensure that the stations it serves are equipped to meet ADA accessibility requirements and provide the level of service appropriate for their size and location.

I.B.2. ADA Requirements – Overview of the ADA Law and Standards

a. Americans with Disabilities Act of 1990 (ADA)

Amtrak strives to ensure that the rail stations it serves are in a state of good repair and are readily accessible to, and usable by, passengers with disabilities as required by Section 242(e)(2) of the Americans with Disabilities Act of 1990 (42 U.S.C. 12162(e)(2)) (the "ADA"). In February of 2009, Amtrak submitted to Congress "A Report on Accessibility and Compliance with the Americans with Disabilities Act of 1990," (the "Stations ADA Report") that details Amtrak's plan for making the 481 stations Amtrak currently serves compliant with the ADA. However, the Stations ADA Report does not include restoration assessments and development plans for any of the potential station stops for this route in Montana or any alternative stations that might be added in their place.

b. Construction and Alteration of Rail Stations

The ADA precludes Amtrak from "[building] a station for use in intercity rail transportation that is not readily accessible to and usable by persons with disabilities, including individuals who use wheelchairs." (42 U.S.C. 12162(e)(1)). Whether Amtrak uses the existing station structures or new stations built by others, all stations will likely be deemed "new stations" for purposes of the ADA. As such, Amtrak cannot serve them unless and until they are made fully ADA compliant. Accessibility can be achieved through the use of wheelchair lifts where applicable. Preliminary research indicates that the existing buildings on the proposed route and the land on which they sit are owned in most instances by either the host railroad or a private developer. Nevertheless, some city and county governments may have a strong interest in funding the establishment of Amtrak service in their communities.

I.B.3. Station Development Process

Amtrak's Stations Development Plan is founded on a set of station surveys completed for each of the 481 stations served by Amtrak that are required to be made ADA compliant and are contained in the Stations ADA Report.

Station designs are initiated through the development of a conceptual design process. The conceptual design describes the scope of the project, time frames for implementation, responsibilities for improvements, and management process steps for completing the detailed design and construction process.

The scope, schedule, and budget, along with funding assumptions and management responsibilities and actions, are developed as part of this stage, along with covering agreements among and between the parties associated with implementation.

This conceptual design phase is followed by the final design and construction phase of the project. The nature and duration of this phase depends upon the size of the station involved and the extent of the work necessary to refurbish it. These projects typically follow a design-build approach, in which a single contractor would handle both the detailed design and the construction. Based on Amtrak's experience, the duration for these projects from start to finish, could average approximately 36-48 months.

I.B.4. Station – Related Agreements Required

As part of the conceptual design process associated with potential station restoration, occupancy and maintenance agreements would need to be negotiated between Amtrak on the one hand, and the local governmental entity or the private owners of the station sites on the other. As the station sites are now used for various purposes, including freight railroad operations, these negotiations likely will become complex.

Arrangements for adding and maintaining electronic ticketing and passenger information display systems (where appropriate), and other elements of the delivery system for service require detailed inventory and responsibility assignment. It is the expectation that the costs of such display systems and electronic ticketing equipment would be borne by parties other than Amtrak as part of the proposed new state-supported service. Amtrak would expect to enter into an agreement with the local city or county which would specify that the local government entity will provide for all ongoing maintenance associated with the station facility. This agreement would also delineate the responsibility for the day-to-day station operating expenses.

I.B.5. Station Funding Consideration

An important consideration in establishing the proposed station stops is the source of funding for these efforts. Given the significant amount of ADA-related work associated with these projects, it is impractical to distinguish ADA-related costs from general refurbishment and state of good repair expenditures. For example, missing platforms must be replaced both to comply with ADA and for customer service considerations.

I.B.6. Station Capital Costs

Recent surveys of some stations along the route indicate that some stations may not be suitable for use in any future passenger train service between Williston and Sandpoint.

Even if the current sites can be used, some or all of the stations would require the construction of a new platform in order to meet current requirements. The parking lots at the potential station location should be re-striped, or replaced altogether. Although Amtrak's Station guidelines do not designate parking as a mandatory feature for small stations (the category in which the five stations fall), parking facilities should be added. As public transportation options in these on-line communities are limited, passengers using these facilities will most likely use personal automobiles as their primary mode of transportation to and from these stations. Developing connections to other modes of transportation would be encouraged, at the option of local partners.

Determination of capital investments for station restoration and for achieving ADA compliance will depend upon final station design as agreed upon by MDT, the host carriers and current station owner/operators as well as with input from local governments and Amtrak. No estimates of total station capital investments have been developed at this time.

I.B.7. Station Operating Cost Estimates

Once the necessary capital improvements to the potential station stops have been made, an annual operating expenditure will need to be determined for maintaining them in a state of good repair and to ensure that they remain ADA compliant. The expenses

associated with these stations will derive from utilities, snow removal, facility upkeep and communications.

II.A.1. Capital Infrastructure Requirements

The Williston – Sandpoint route can be divided into several segments:

A. The 26.1 mile Williston – Snowden portion is main line trackage, owned and maintained by BNSF. The track is in generally excellent condition, with continuous welded rail and rail weights ranging from 115# to 141#. Crossties and track surface conditions are excellent and the line is signaled. No upgrading or rehabilitation would be required for the initiation of passenger service between Williston and Snowden, although it may be necessary to address capacity issues through the addition of some additional trackage. This latter topic is beyond the scope of the current study and may require operations modeling should a decision be made by the MDT to initiate such service.

B. The 72.6 mile Snowden – Glendive route segment, is owned by the BNSF, but is leased, maintained, and operated by the YSVR, a short line subsidiary of the Watco Companies. A hi-rail inspection with members of the YSVR's Engineering and Transportation departments revealed a number of physical plant challenges that must be addressed before passenger operations can be considered.

   The YSVR connecting track with the BNSF is located at Snowden, with the configuration permitting straightway movements between the BNSF to/from Williston. Main track rail weights on the YSVR range from 90# jointed to 136# welded. Crosstie conditions, as well as surface and ballast conditions vary across the railroad and a crosstie replacement program is recommended. Prior to the initiation of passenger operations, it will be necessary to replace approximately 12 miles of 90# jointed rail between Snowden and Sidney. In addition, there is approximately another 10 miles of 110# jointed rail, which is recommended for replacement on that segment. Increasing maximum operating speeds for passenger operations will also require major sub-grade, ballast, and surfacing improvement work over the entire Snowden – Sidney line segment.

   Between Sidney and Glendive, track conditions, especially rail conditions, are markedly better than between Snowden and Sidney, and most of this segment is continuous welded rail. A spot tie replacement and overall surfacing program is recommended.

   Since the entire YSVR is "dark", non-signaled territory, it will be necessary to install a block signal system along the entire length of trackage between Snowden and Glendive if it is desired to operate passenger trains at a maximum speed of 79 mph. Furthermore, it will also be necessary to lengthen the approach circuits at all grade crossings equipped with train activated warning devices. No analysis was conducted of line capacity issues that might arise with the introduction of passenger

service on the YSVR, especially between Snowden and Sidney, so there are no recommendations contained in this memo relative to the addition of sidings or other capacity improvements.

C. The BNSF's 212.7 mile Glendive to Jones Jct. trackage is well maintained with heavy continuous welded rail, much of it 136# and 141#. This is a core BNSF line with heavy freight traffic and it is recommended that a capacity analysis be performed in the event the proposal to operate passenger service is advanced. The line is signaled and no track upgrading or rehabilitation needs were identified. Of course, should speeds be increased on the line for passenger trains above today's maximum freight train speeds, it may be necessary to lengthen the approach circuits at public grade crossings equipped with train-activated warning devices.

D. The 374.6 mile Jones Jct. – Missoula segment of the MRL consists almost entirely of continuous welded rail of various weights ranging from 112# to 141#. The railroad is well maintained and has many of the physical and operating characteristics of a class 1 railroad. There are several opportunities to increase track speed without major infrastructure improvements, where grade crossing circuits could be lengthened to permit trains to safely approach the grade crossings at faster speed.

   Additional improvements would be needed to provide adequate siding capacity to allow for passenger trains and to relieve congestion through areas where there is heavy coal and grain traffic volume. A major freight traffic congestion point is through the 3 mile area of Laurel yard where several trains can typically be on the MRL main track awaiting switching, fueling, or change-out of locomotives and crews. Improved connection tracks and signaling through Laurel yard will enhance freight movement fluidity and help expedite movement of passenger trains through this congested area.

E. The 206.6 mile segment from Missoula to Sandpoint has rail in weights ranging from 100# jointed to 132# continuous welded. Tie and surface condition is excellent throughout this segment. The segment from DeSmet to Paradise, MT is "dark" un-signaled territory. In order to accommodate meets with passenger trains, MRL has identified a need for certain track and switch improvements.

II.A.2. <u>Positive Train Control</u>

Legal requirements for installation of Positive Train Control (PTC) equipment must be considered.

Positive Train Control is a system designed to prevent train-to-train collisions, train operations above authorized speeds, train operations in maintenance-of-way work zone limits, and the movement of a train through a switch left in the wrong position. The Rail Safety Improvement Act of 2008 mandates that, by December 31, 2015, PTC be installed on those lines of Class-I railroads that carry over five million gross tons of

traffic annually, and have either toxic-by-inhalation hazardous materials (TIH) traffic or passenger trains. The Act also gives the FRA (Federal Railroad Administration) the authority to require PTC installation on other rail lines. FRA has recently issued proposed regulations that would require PTC on virtually all rail lines over which scheduled passenger trains operate. At this time, the scope, costs and funding responsibilities are still to be determined.

III. Conclusions

This study considers Montana's southern route, via Williston, ND and Sandpoint, ID focusing mainly on track conditions and general requirements that would need to be met to enable passenger rail service along the route.

The analysis is intended to inform public interest in the development of passenger rail service proposals. Amtrak recommends that state policymakers determine if passenger rail service should be developed along this route and, if so, the state should provide the required capital and operating funding. Upon such a commitment, Amtrak will work cooperatively with public and private partners to establish the service.

Exhibits

1. Route Map
2. Map of Proposed Route Versus Former Butte, Deer Lodge Route
3. Population Tables
4. Acronyms/Definitions
5. References
6. Selected Route Photos

EXHIBIT 3

Route Population by City/Town

City	2008 Census	2000 Census	Difference	% Difference
Williston, ND	12,641	12,512	129	+1.0%
Sidney, MT	4,782	4,774	8	+0.2%
Glendive, MT	4,585	4,729	(144)	-3.0%
Miles City, MT	8,102	8,487	(385)	-4.5%
Forsyth, MT	1,857	1,944	(87)	-4.5%
Billings, MT	103,994	89,847	14,147	+15.7%
Livingston, MT	7,500	6,851	649	+9.5%
Bozeman, MT	39,442	27,509	11,933	+43.4%
Helena, MT	29,351	25,780	3,571	+13.9%
Missoula, MT	68,202	57,053	11,149	+19.5%
Paradise, MT	197	184	13	7.1%
Sandpoint, ID	8,337	6,835	1,502	+22.0%
Total	**288,990**	**246,505**	**42,485**	**17.2%**

Route Population by County

County	2008 Census	2000 Census	Difference	% Difference
Williams County, ND	19,846	19,761	85	0.4%
Richland County, MT	9,270	9,667	(397)	-4.1%
Dawson County, MT	8,490	9,059	(569)	-6.3%
Custer County, MT	11,149	11,696	(547)	-4.7%
Rosebud County, MT	9,190	9,387	(197)	-2.1%
Yellowstone County, MT	142,348	129,350	12,998	10.0%
Park County, MT	16,189	15,694	495	3.2%
Gallatin County, MT	89,824	67,831	21,993	32.4%
Lewis & Clark County, MT	60,925	55,716	5,209	9.3%
Missoula County, MT	107,320	95,799	11,521	12.0%
Sanders County, MT	11,034	10,227	807	7.9%
Bonner County, ID	41,168	36,835	4,333	11.8%
Total	**526,753**	**471,022**	**55,731**	**11.8%**

EXHIBIT 4

Acronyms/Definitions

ABS	-	Automatic Block Signals – On a specific section or length of track, an arrangement of automatic signals governing each block.
ADA	-	Americans with Disabilities Act
BNSF	-	The Burlington Northern Santa Fe Railway Corporation
CTC	-	Centralized Traffic Control – A term applied to a system of railroad operation by means of which the movement of trains over routes and through blocks on a designated section of track or tracks is directed by signals controlled from a designated control point.
MDT	-	Montana Department of Transportation
MRL	-	Montana Rail Link
Restricted Limits	-	A railroad operating rule which states that "Between designated points specified by signs and in a railroad's special instructions, trains and engines may use the main track not protecting against other trains or engines. All movement must be at restricted speed. Movements against the current of traffic must not be made unless authorized or protected by track warrant, track bulletin, yardmaster, or other authorized employee."
TWC	-	Track Warrant Control – A method to authorize train movement to protect men or machines on a main track within specified limits in a territory designated by the timetable.
YSVR	-	Yellowstone Valley Railroad

EXHIBIT 5

References

a. Burlington Northern Santa Fe, Montana Rail Link and Yellowstone Valley Railroad Employer Timetables

b. Burlington Northern Santa Fe and Montana Rail Link Track Charts

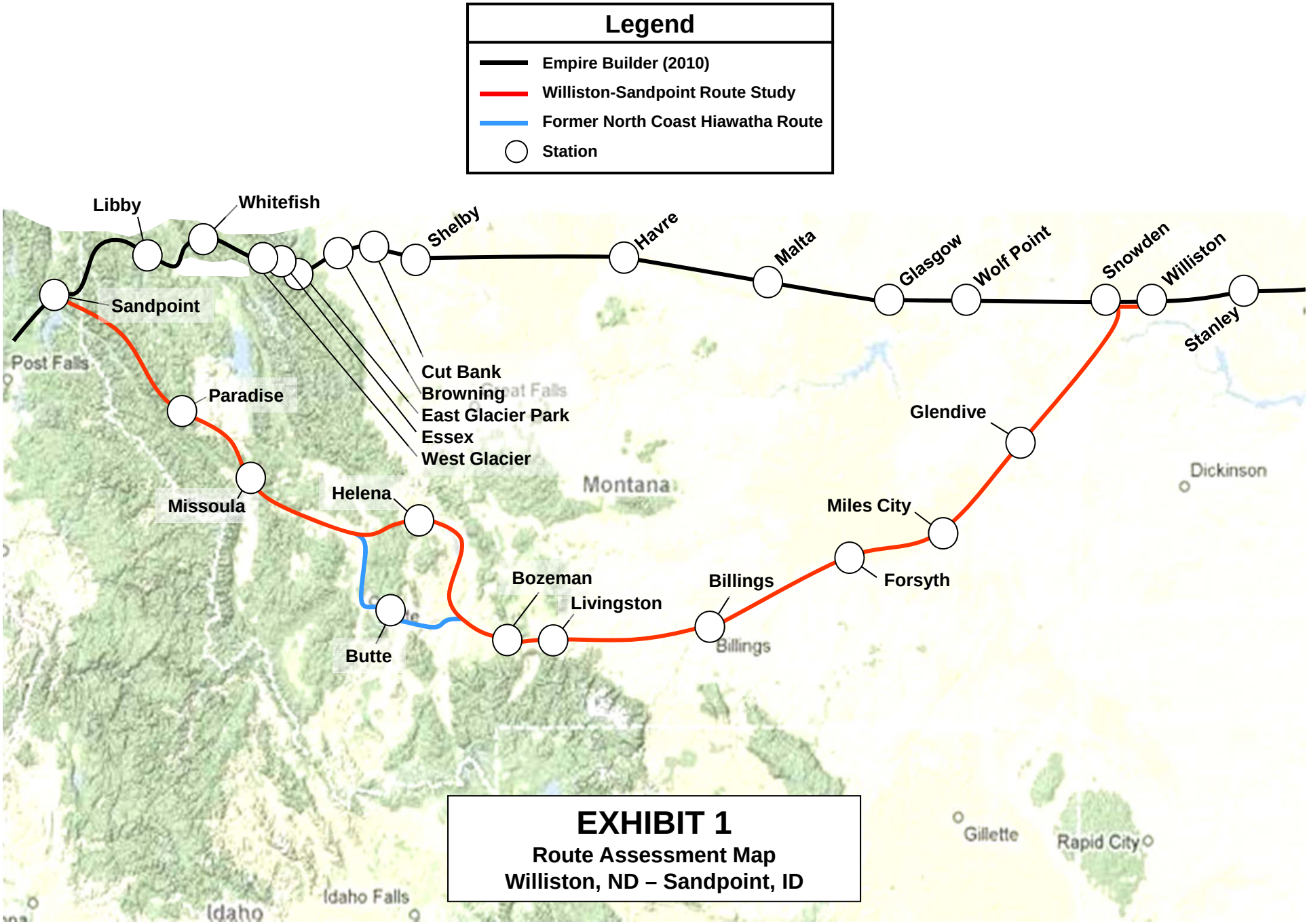
c. Montana Department of Transportation, Various Resources

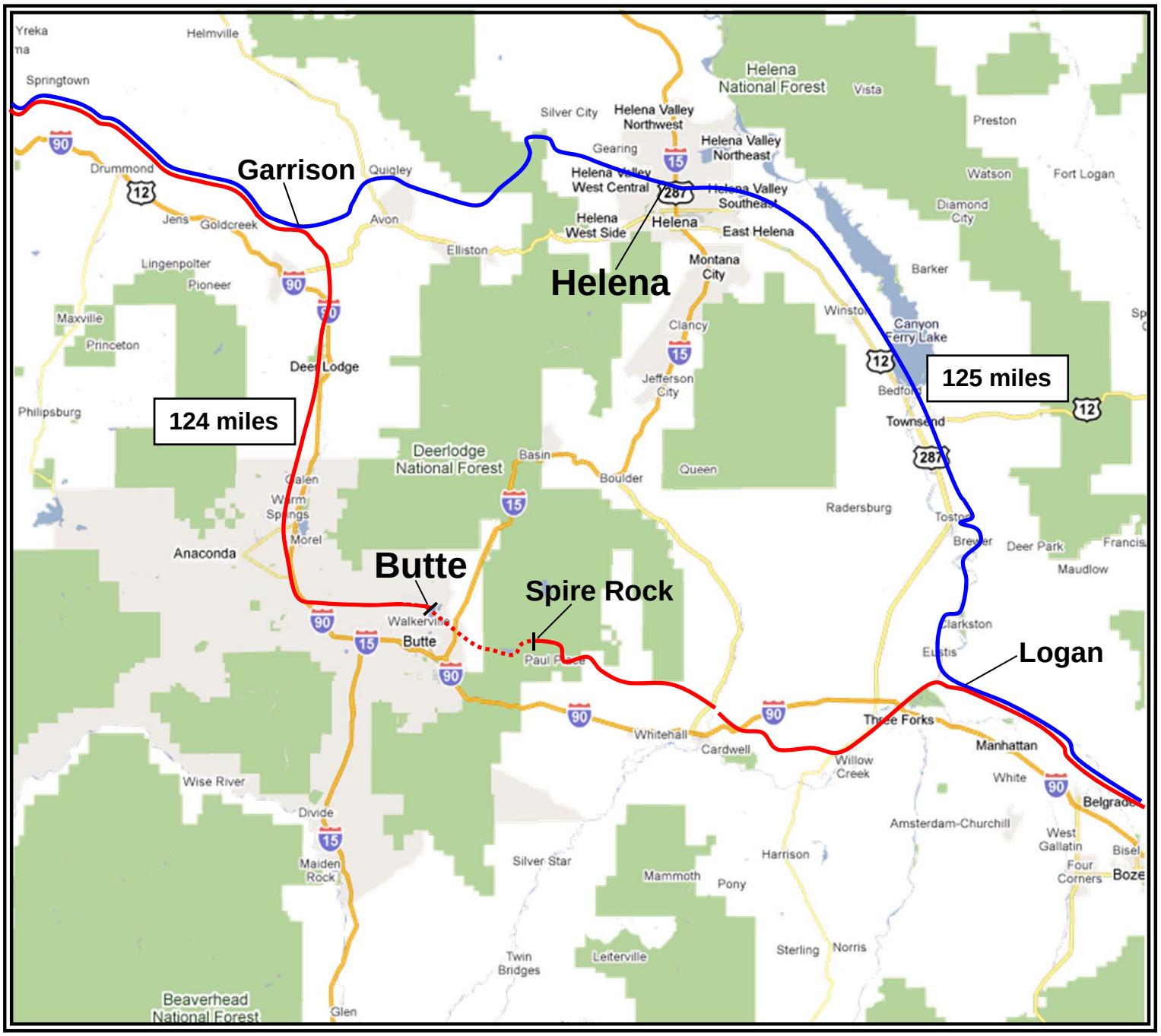
d. Montana State Rail Plan, Year 2000

e. Montana Branch Line Study Phase II
R.L. Banks Assoc, Inc. September 2004

f. Various Internet Services

g. Russell's Official National Motor Coach Guide, September 2009


Legend
Empire Builder (2010)
Williston-Sandpoint Route Study
Former North Coast Hiawatha Route
Station
Libby
Whitefish
Shelby
Havre
Malta
Glasgow
Wolf Point
Snowden
Williston
Stanley
Sandpoint
Post Falls
Paradise
Cut Bank
Browning
East Glacier Park
Essex
West Glacier
Missoula
Helena
Montana
Glendive
Dickinson
Miles City
Forsyth
Billings
Bozeman
Livingston
Butte
Billings
Gillette
Rapid City
Idaho Falls
Idaho
EXHIBIT 1
Route Assessment Map
Williston, ND – Sandpoint, ID



Legend

1979 North Coast Hiawatha Route:

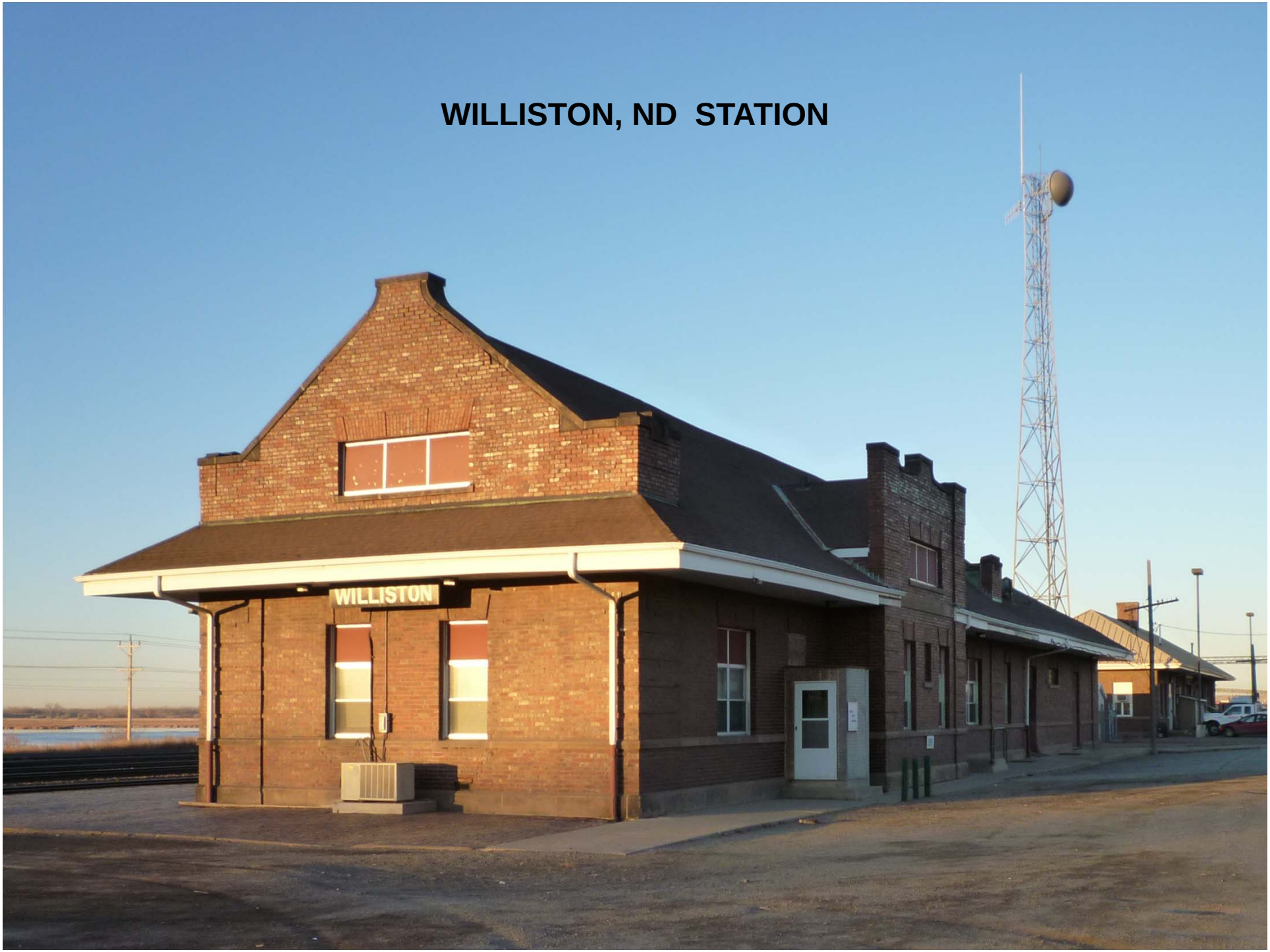
2010 Proposed Route:

Track currently out of service:

Exhibit 2

Map comparing the proposed route with the route followed by the North Coast Hiawatha in 1979.

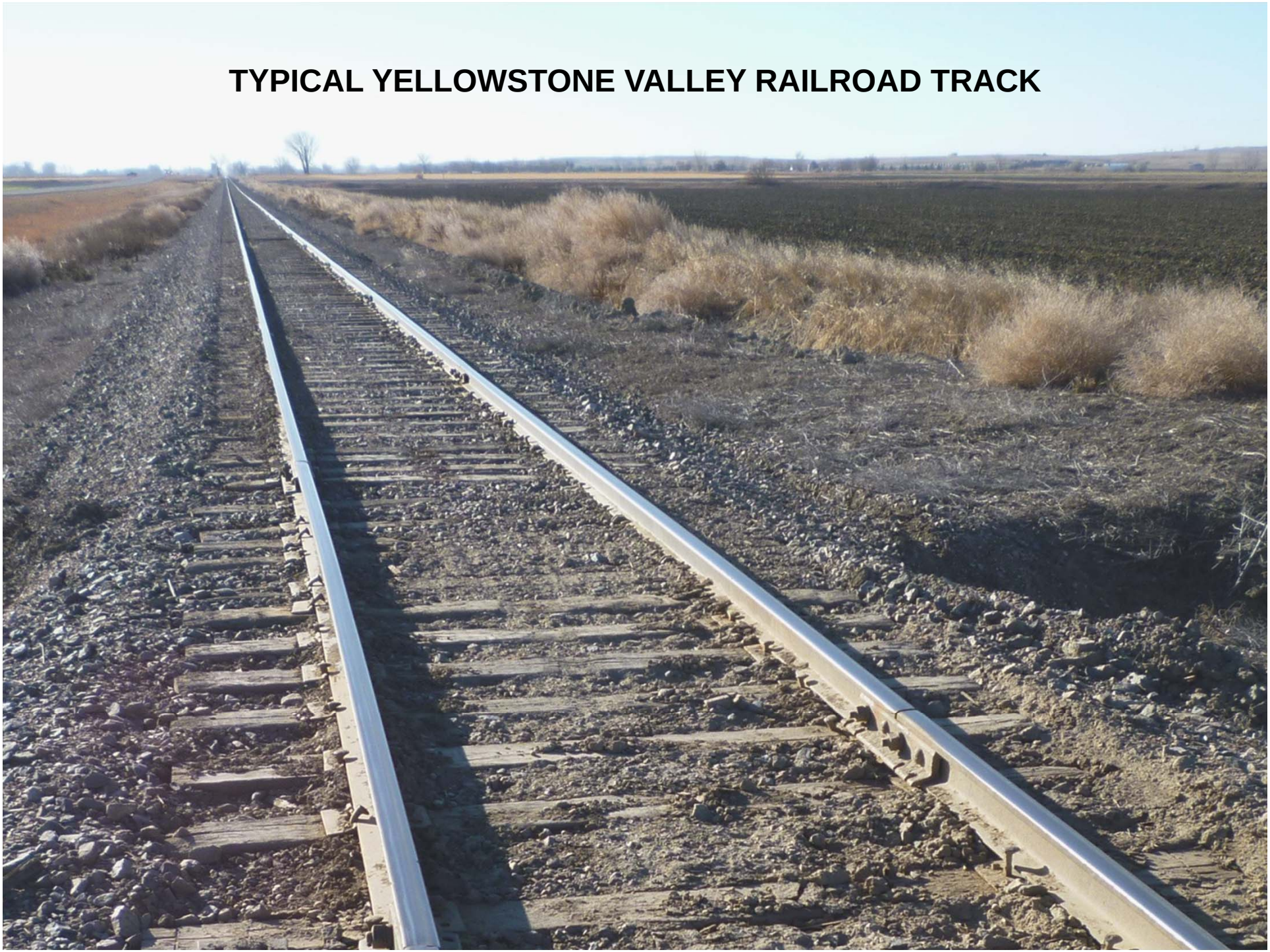
WILLISTON, ND STATION



TYPICAL BNSF RAILWAY TRACK

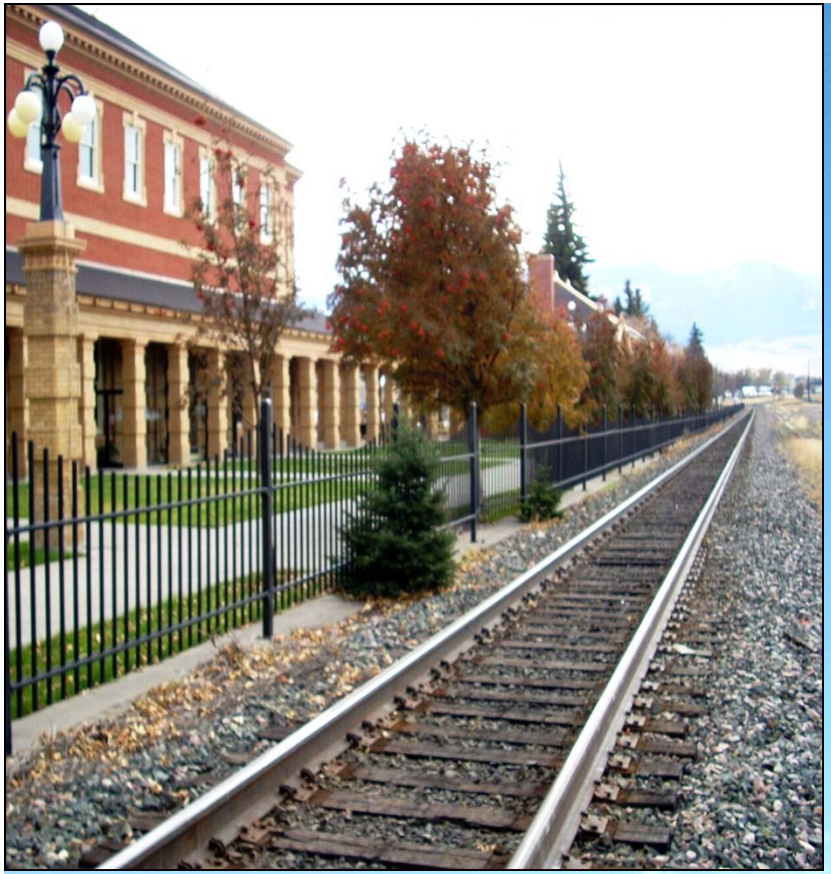
GLENDIVE, MT STATION

TYPICAL YELLOWSTONE VALLEY RAILROAD TRACK



BNSF COAL TRAIN

BILLINGS, MT STATION



LIVINGSTON, MT STATION
No Platforms

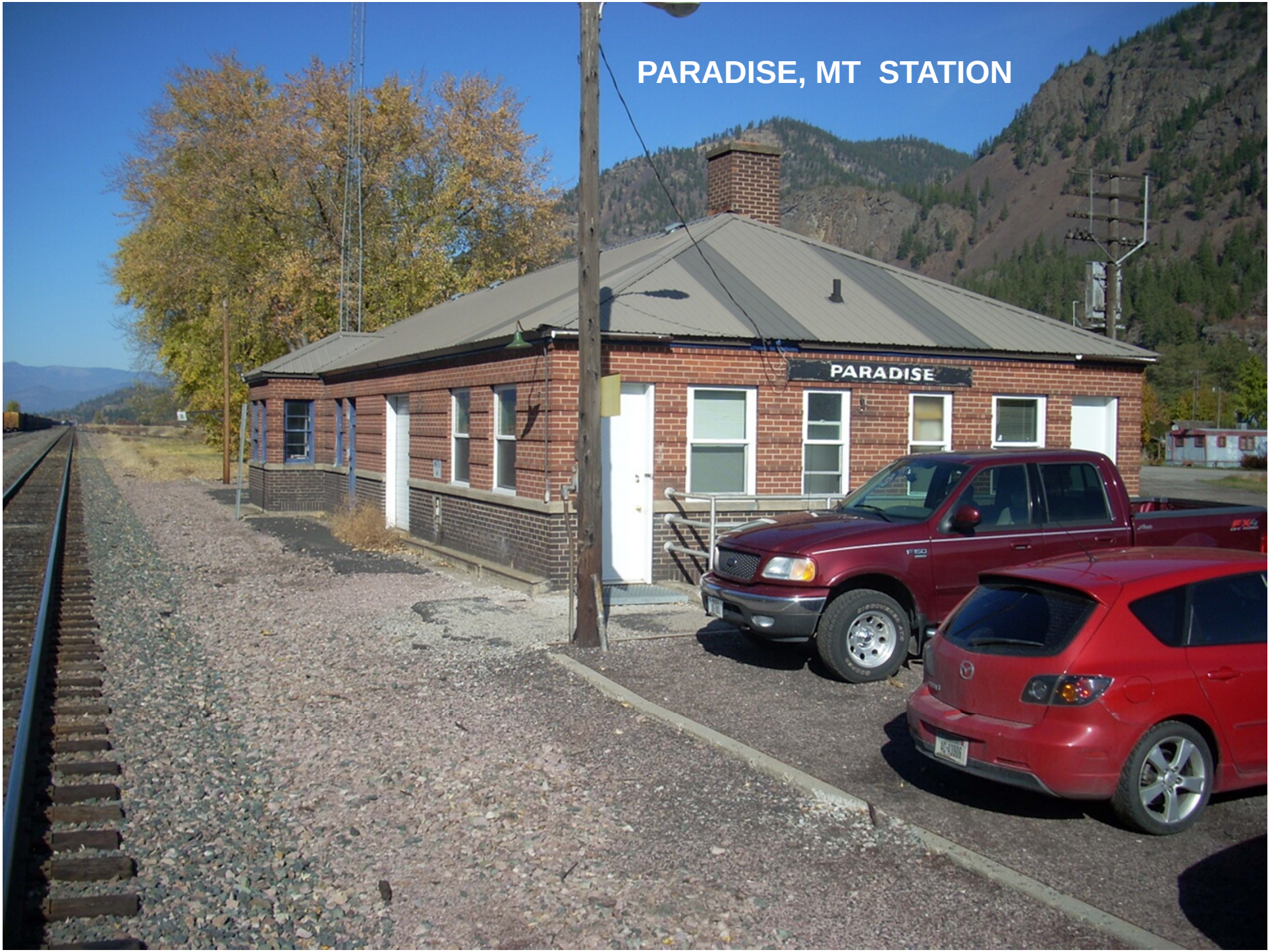

BOZEMAN, MT STATION
No Platform, Building Badly Graffitied

HELENA, MT STATION
Has Two Platforms, No Tactile Edge


MISSOULA, MT STATION
With Mainline Fueling Facility in Foreground


MONTANA RAIL LINK HELPER ENGINES
AUSTIN, MT
STOP
AUSTIN

TYPICAL MONTANA RAIL LINK TRACK
MILEPOST 76 BETWEEN GREYCLIFF AND BIG TIMBER, MT


PARADISE, MT STATION
PARADISE

SANDPOINT, ID STATION

Feasibility Report of Proposed Amtrak Service
Billings – Missoula, Montana

Prepared By:

M.W. Franke
Assistant Vice President -
State and Commuter Partnerships
(Central)

B. E. Hillblom
Senior Director – State Partnerships

R. P. Hoffman
Principal Officer – Corridor Planning

Amtrak
Chicago, Illinois
January 22, 2010

Feasibility Report of Proposed Amtrak Service

Billings – Missoula, Montana

Table of Contents

Feasibility Report of Proposed Amtrak Service

Billings – Missoula, Montana

I. Introduction and Background

I.A. General Discussion

The Montana Department of Transportation (MDT) formally requested Amtrak to provide assistance in preparing a feasibility study of potential intercity passenger rail service through the southern part of Montana. MDT's request states that it is seeking to provide practical information to state decision-makers on the capital and operating costs of passenger rail service to inform their constituents of state investments that would be necessary to begin and sustain such service. To provide MDT with the requested information, Amtrak conducted a two-part study of the feasibility for intercity passenger rail service as follows:

Sandpoint, ID - Williston, N.D.

As requested by MDT, Amtrak was to make an assessment, of the "order of magnitude" capital infrastructure investments necessary on this route segment to meet both the requirements of future passenger service and the operating needs of the host railroads. Amtrak was requested to accomplish this assessment through limited sample route inspections and from input and information provided by the host railroads. No additional analysis or other financial information was requested for this portion of the study, and no ridership forecasts or schedule development was required.

Billings, MT - Missoula, MT

In addition to its Sandpoint, ID – Williston, ND assessment, Amtrak was requested to conduct a more detailed analysis of the Billings, MT - Missoula, MT segment, to include a complete route inspection, development of "order of magnitude" capital investments, review of host freight railroad operations, and development of passenger service schedule recommendations, revenue/ridership forecasts, one time start-up costs (rolling stock, employee-related hiring and training, etc.), equipment servicing facility requirements, station needs, estimated annual operating expenses, and state support requirements.

This report covers the more detailed Billings – Missoula portion of the study requested by the MDT. Amtrak's report covering the longer Sandpoint, ID - Williston, N.D. route will be presented to MDT in April 1, 2010.

Prior Amtrak Service On The Route Under Study

On June 1971, Amtrak began operating a tri-weekly section of the Chicago to Seattle *Empire Builder* over the former Northern Pacific Railroad line, then owned by the Burlington Northern Railroad, between Minneapolis/St. Paul, Minnesota and Spokane, Washington via southern Montana. Later, the *North Coast Hiawatha* became a separate

Chicago-to-Seattle train, operating on a variety of schedules on either a daily or tri-weekly basis until it was discontinued on October 1, 1979. Prior to its discontinuance in 1979, the *North Coast Hiawatha* operated via Butte and Deer Lodge, Montana. All rail operations on a portion of this segment have long ceased due to minimal freight traffic volume, resulting in the proposed new routing of the Billings – Missoula service through Helena, Montana. While northern Montana is still served by Amtrak's *Empire Builder*, the southern part of the state has not seen Amtrak service since 1979.

Proposed Route

The area between Billings and Missoula includes many rapidly growing communities. Billings, Montana's largest city with a metropolitan area population of 152,000, as well as several other locations along the route, have experienced double digit percentage population growth since the year 2000. For example, from 2000 to 2007, the population of Bozeman, the fastest-growing city in the state, has increased an estimated 38.1% to approximately 38,000. Total population in the counties served by the proposed corridor is approximately 428,000.

Billings is recognized as a major business, cultural and educational center, the site of four college campuses, the location of numerous corporate headquarters, and it hosts a number of museums. **Livingston** serves as a gateway to Yellowstone National Park whose north entrance is located only 54 miles to the south of the proposed route. The park features dramatic lake views, canyons, rivers, mountain ranges and geysers, and attracts approximately 3 million visitors each year. **Bozeman**, is home to Montana State University, with a student population of 14,000, several museums, numerous tech companies, and it is a very scenic area surrounded by four mountain ranges. **Helena**, the state capital is home to two colleges, several museums and many cultural attractions, and is near the Missouri River with its large reservoir and many lakes. The route crosses the Continental Divide at Blossburg, Montana at a 5,400 foot elevation near the 3,900 foot-long Mullan Tunnel. **Missoula**, the westernmost proposed station stop on the route, is located near the confluence of the Clark Fork and Bitterroot Rivers and is near the Flathead Indian Reservation. It is the home of The University of Montana with a student population of nearly 14,000. It is reported that Missoula on average enjoys more mild winters than the rest of Montana, allowing for more year-round outdoor activities.

Other Route Transportation Modes

Bus service on the corridor is provided by Rimrock Stages Inc. Between Billings and Missoula there are four round trip frequencies each day. Rimrock Stages trip time between Billings and Missoula is approximately 6 hours and 25 minutes. Helena is served from Billings and Missoula via a once a day bus connection in Butte.

The cities of Billings, Livingston, Bozeman, and Missoula are linked directly by Interstate 90, with maximum authorized speeds of 75 mph. Helena lies on Interstate-15 (also with maximum authorized speeds of 75 mph), which interchanges with I-90 near Butte. Automobile travel time by interstate highway between Billings and Missoula is less than five hours under ideal weather conditions.

Intrastate commercial airline traffic in the corridor is limited to one daily Alaska Airlines round trip between Helena and Billings.

I.A.1 Study Process Outline

Following receipt by Amtrak of the study request, a physical evaluation of the Billings-Missoula route was conducted with representatives of Montana Rail Link (MRL), the freight operator of the route, including a hi-rail inspection, to assess general infrastructure conditions and capital needs. Also identified during discussions with MRL, were operational challenges on this route. Revenue/ridership forecasts were determined based on recommended schedules, and estimates of cost to operate the service were also developed. The underlying assumption reflected the fact that there was a desire to establish train service in the most expeditious and practical way possible. This study, therefore, has concentrated on incremental and focused improvements, including the possibility of raising the speeds on some of the route segments. No "high speed" scenarios were considered. The goal was to provide a high-level overview and objective report of the findings to MDT for their further consideration.

The specific infrastructure improvement proposals, draft schedules and other railroad-related comments in this report have not been negotiated, or agreed to, with MRL and reflect only the findings and best judgment recommendations of the study team. Should further progression of this proposal or an alternate be desired by MDT, detailed discussions and formal negotiations will have to be initiated with that rail carrier.

It is recommended that another inspection of the route be conducted to update the capital needs if and when this passenger train proposal is funded by the MDT. Such an update would help ascertain whether any operational or freight traffic volume changes would warrant a revision of the foregoing scope of infrastructure work, or in the event ongoing maintenance work or track degradation has changed the capital requirements.

Billings – Missoula Route Description

I.A.2. Route Description

The entire 358 mile route from Billings to Missoula is over three subdivisions, or operating districts, of the host railroad, MRL. (Exhibit 1)

MRL First Subdivision: Billings – Spurling (18 miles)

The route from Billings to Spurling is double track, controlled by Automatic Block Signaling (ABS) with Track Warrant Control (TWC) for the first 11.5 miles. The remainder of the segment is controlled by Centralized Traffic Control (CTC), with the exception of a short segment at Laurel yard between MP 12.2 and 14.8 governed by yard limit rules. The largest yard on MRL is located on this segment at Laurel. An average of 1,200 cars per day are handled through this facility, which operates around the clock, with up to six trains switched at one time. The maximum authorized track speed between Billings and Spurling is currently 60 mph.

The most challenging aspect of this subdivision is operating through the three mile long Laurel area with minimal delays. At Laurel, MRL's East-West main line intersects with a BNSF North-South line. All freight trains stop to change crews here and many MRL trains pick-up or set-off cars. Frequently, several trains wait for handling outside the yard, occupying main line tracks and thereby preventing other trains from passing. The Laurel yard currently does not have a signaled main line. All trains traveling through the yard must use a non-signaled yard track, necessitating slow speed movements.

MRL Second Subdivision: Spurling – Helena (221 miles)

West of Spurling, the route passes through Livingston and Bozeman on the way to Helena, and is controlled entirely by CTC, with yard limit rules in effect for several miles in Livingston and Helena. The line from Spurling to Helena is single track, including 23 sidings, with an average length of 8,600' and average spacing of 9.5 miles. From Spurling to Livingston, curves are infrequent and maximum authorized speed is generally 60 mph. West of Livingston, the route begins with the 13 mile long, 1.8% grade ascent of Bozeman pass. Maximum authorized speed is 30 mph near the crest of the grade. After passing through the 3,015' long Bozeman Pass Tunnel, the track crosses the summit of the pass at 5,562' above sea level. At this point the track descends at a maximum grade of 1.9%. This is an extremely scenic area.

There are a number of sharp curves in the first few miles of the descent, restricting maximum speed until reaching Bozeman. West of Bozeman, there is a 13.3 mile stretch of straight track with 60 mph maximum authorized speed. On the route segment paralleling the Missouri River, maximum speed is 25 mph for about nine miles. This segment features frequent sharp curves that prohibit faster operations. Westward from Lombard, curves are less frequent and maximum authorized speed increases again to

60 mph. There are several challenging aspects of this subdivision including 258 curves, some of them up to 10 degrees in sharpness, the mountain passes with a 1.9% grade between Bozeman and Livingston, a river grade canyon with high degree curves, and slow track between Logan and Toston, a 1% grade between Townsend and Winston and, of course, recurring extreme cold winter weather.

MRL Third Subdivision: Helena – Missoula (119 miles)

Except for approximately 5 miles of double main track, the 120 mile segment from Helena to Missoula is single track operated generally under CTC control. There are eleven sidings on this route segment, with an average length of approximately 9,900', and average spacing between sidings of about 9.5 miles. To the west of Helena, the track ascends a nearly 17 mile-long grade of 2.2%. On the ascent, there are several sharp curves with corresponding speeds as low as 20 mph. After passing through the 3,896' long Mullan Tunnel, the track reaches the summit of the grade and crosses the Continental Divide at 5,400 feet above sea level. The track descends from the summit with a 1.4% grade on the west slope and maximum authorized speeds as low as 35 mph. On the remainder of the route into Missoula, curves are less frequent and the maximum authorized speed is generally 60 mph. Before reaching Missoula, the route passes through the Garrison, Nimrod, and Bonita tunnels which are 1,394', 909', and 896' in length, respectively. An average of 10-12 freight trains per day operate between Billings and Missoula. The majority of the traffic, 6-7 trains per day, is general merchandise freight. There are usually several coal and grain movements each day as well. Loaded coal traffic typically moves westbound in unit trains while empty coal cars eastbound.

The Third subdivision has its share of challenges, with 152 curves, some up to 10 degrees in sharpness, a 2.2% mountain pass with high degree curves, and slow track limited to a 20 mph maximum authorized speed from Austin to Blossburg.

Logan – Butte - Deer Lodge - Garrison Route

Amtrak's former Chicago – Seattle North Coast Hiawatha train (last operated in 1979) operated on the Logan – Butte – Deer Lodge – Garrison route. This Billings – Missoula study proposes the use of the Logan – Helena – Garrison route segment. Use of the former route would require major infrastructure investments by both the MRL and Burlington Northern Santa Fe (BNSF) railroads to bring the segment to a safe and practical condition for passenger service. A brief description of the formerly-used route segments as they are today follows, and a map of both the former and proposed segments is shown in Exhibit 2.

The distances on this route break down as follows:

Logan – Spire Rock	(51 miles)
Spire Rock – Butte	(19.5 miles)
Butte – Garrison	(51 miles)

The Logan to Spire Rock segment is owned by MRL. It operates daily local trains to Sappington, a twice a week train to Whitehall, and trains bring rock ballast out of the Spire Rock area as needed. The segment is non-signalized and is mostly 35 and 40 mph, with some 10 and 25 mph portions. Rail weights vary from 100# to 132# and there is a 2.2% ruling grade between mile post 42.3 and 51.0.

The Spire Rock to Butte segment is owned by BNSF. It is out of service and mothballed and has not been operated for over 20 years. There is severe track, road bed, and sub-grade erosion in several places, general track condition is poor, there are two tunnels that need to be rehabilitated, and several bridges need to be rebuilt. There are many curves on the segment, including some of 12 degrees, the ruling grade is 2.2% and the elevation on the segment reaches 6,332 ft. at Homestake. This situation is not conducive to passenger rail operations.

The Butte to Garrison segment is owned by BNSF. Freight service is currently operated locally Butte – Garrison – Butte, 5 days per week. The segment is not signalized, has no sidings and has a maximum operating speed of 25 mph. The track is mostly 100# and 115# rail, with heavier sections of 132# rail in the areas where there are numerous curves.

Highway Grade Crossings

There are a total of 274 at-grade crossings on the MRL between Billings and Missoula. Of the total of 106 public crossings, 28 have cross bucks only, 16 have train-activated flashing lights, and 62 have both train-activated flashing lights and gates. Of the 168 private crossings, most are equipped with cross-bucks only. An estimate to upgrade grade crossing warning device approach circuits to permit higher speeds has been included in the "Order of Magnitude" capital cost table on page 13. It is recommended that discussions with the State of Montana be initiated about any additional grade crossing warning device or closures that may be deemed appropriate for the route based on a diagnostic analysis conducted by the MDT in cooperation with MRL.

I.B. Station Facilities

I.B.1. General Discussion

For purposes of this feasibility study, it is assumed that all new station facilities will be provided by parties other than Amtrak, including platforms, parking lots, and waiting areas. The assumption is that local communities desiring a station stop will provide such facilities, as well as ongoing maintenance, snow and ice removal, and janitorial services. This study assumes no addition of station personnel, but does include the capital cost of five so-called "Quik-Trak" self-service ticketing machines at the stations. Suggested station stops shown in the sample schedule can be modified depending upon the willingness and abilities of the communities to provide facilities.

Whether Amtrak uses the existing station structures or new ones, it must be ensured that they are in a state of good repair and are compliant with the Americans with Disabilities Act of 1990 (ADA) before service is initiated to these communities. Amtrak has developed an extensive process for assessing and completing work necessary to develop or restore stations. This process allows Amtrak to ensure that the stations it serves are equipped to meet ADA accessibility requirements and provide the level of service appropriate for their size and location.

I.B.2. ADA Requirements – Overview of the ADA Law and Standards

a. Americans with Disabilities Act of 1990 (ADA)

Amtrak strives to ensure that the rail stations it serves are in a state of good repair and are readily accessible to, and usable by, passengers with disabilities as required by Section 242(e)(2) of the Americans with Disabilities Act of 1990 (42 U.S.C. 12162(e)(2)) (the "ADA"). In February of 2009, Amtrak submitted to Congress "A Report on Accessibility and Compliance with the Americans with Disabilities Act of 1990," (the "Stations ADA Report") that details Amtrak's plan for making the 481 stations Amtrak currently serves compliant with the ADA. However, the Stations ADA Report does not include restoration assessments and development plans for any of the potential station stops for this route in Montana or any alternative stations that might be added in their place. The latter was addressed in some supplemental work performed by Amtrak recently.

b. Construction and Alteration of Rail Stations

The ADA precludes Amtrak from "[building] a station for use in intercity rail transportation that is not readily accessible to and usable by person with disabilities, including individuals who use wheelchairs." (42 U.S.C. 12162(e)(1)). Whether Amtrak uses the existing station structures or new stations built by others, all stations will likely be deemed "new stations" for purposes of the ADA. As such, Amtrak cannot serve them unless and until they are made fully ADA compliant. Accessibility can be achieved through the use of wheelchair lifts where applicable. Preliminary research indicates that the existing buildings on the proposed Billings – Missoula route and the land on which they sit are owned in most instances by either the MRL or a private developer. Nevertheless, some city and county governments may have a strong interest in funding the establishment of Amtrak service in their communities. As of the date of this report, no local government along the route has been consulted about financing such an arrangement.

I.B.3. Station Development Process

Amtrak's Stations Development Plan is founded on a set of station surveys completed for each of the 481 stations served by Amtrak that are required to be made ADA compliant and are contained in the Stations ADA Report. Recently, Amtrak performed additional surveys of the potential station stops which specify the nature of the improvements required to bring these structures up to a state of good repair and make them ADA accessible.

Station designs are initiated through the development of a conceptual design process. The conceptual design describes the scope of the project, time frames for implementation, responsibilities for improvements and management process steps for completing the detailed design and construction process.

The scope, schedule, and budget, along with funding assumptions and management responsibilities and actions, would be developed as part of this stage, along with covering agreements among and between the parties associated with implementation.

This conceptual design phase is followed by the final design and construction phase of the project. The nature and duration of this phase depends upon the size of the station involved and the extent of the work necessary to refurbish it. These projects typically follow a design-build approach, in which a single contractor would handle both the detailed design and the construction. Based on Amtrak's experience, the duration for these projects from start to finish, could average approximately 36-48 months.

I.B.4. Station – Related Agreements Required

As part of the conceptual design process associated with potential station restoration, lease or purchase agreements would need to be negotiated between Amtrak on the one hand, and the local governmental entity or the private owners of the station sites on the other. As the station sites are now used for various purposes, including freight railroad operations, these negotiations likely will become complex.

Arrangements for adding and maintaining electronic ticketing and passenger information display systems (where appropriate), and other elements of the delivery system for service require detailed inventory and responsibility assignment. It is the expectation that the costs of such display systems and electronic ticketing equipment would be borne by parties other than Amtrak as part of the proposed new state-supported service. Amtrak would expect to enter into an operating agreement with the local city or county which would specify that the local government entity will provide for all ongoing maintenance associated with the station facility. This agreement would also delineate the responsibility for the day-to-day station operating expenses.

I.B.5. Station Funding Consideration

An important consideration in establishing the proposed station stops is the source of funding for these efforts. Given the significant amount of ADA-related work associated with these projects, it is impractical to distinguish ADA-related costs from general refurbishment and state of good repair expenditures. For example, missing platforms must be replaced both to comply with ADA and for customer service considerations.

I.B.6. Station Capital Costs

Recent surveys of the stations along the route indicate that some stations may not be suitable for use in any future passenger train service between Billings and Missoula.

Even if the current sites can be used, some or all of the five stations would require the construction of a new platform in order to meet current requirements. The parking lots at the potential station location must be re-striped, or replaced altogether. Although Amtrak's Station guidelines do not designate parking as a mandatory feature for small stations (the category in which the five stations fall), parking facilities should be added. As public transportation options in these communities are limited, passengers using these facilities will most likely use personal automobiles as their primary mode of transportation to and from these stations.

Based upon the recent surveys, reinstatement of service to the five stations, where feasible, could be costly. Determination of capital investments for station restoration and for achieving ADA compliance will depend upon final station design as agreed upon by MDT, MRL and current station owner/operators as well as with input from local governments and Amtrak. No estimates of total station capital investments have been developed at this time.

I.B.7. Station Operating Cost Estimates

Once the necessary capital improvements to the potential station stops have been made, an annual operating expenditure will need to be determined for maintaining them in a state of good repair and to ensure that they remain ADA compliant. The five stations locations are projected to be un-staffed and as such, have no employee-related expenses. The continuing expenses associated with these stations will derive from utilities, snow removal, facility upkeep and communications.

II. Capital Requirements

II.A.1. Infrastructure

The nearly 358 mile-long Billings – Missoula segment of MRL consists almost entirely of continuous welded rail of various weights, ranging from 112# to 141#. The maximum authorized train speed today is 60 mph, with several lengthy sections of main track restricted to lesser speeds primarily due to track curvature. The railroad is well maintained and has many of the physical and operating characteristics of a Class I Railroad. There are several opportunities to increase track speed on the railroad without major infrastructure improvements to a maximum speed of 79 mph, where grade crossing circuits that are train-activated could be lengthened to permit trains to safely operate over the grade crossings at faster speeds.

Additional improvements will be needed to provide adequate siding capacity to allow for the addition of passenger trains and to relieve congestion through areas where there is heavy coal and grain traffic train volume. A major freight traffic congestion point is through the 3 mile area of Laurel yard, where several trains can typically be on the MRL main track awaiting switching, fueling or change-out of locomotives and crews. Upgraded main track, rearrangement of certain yard tracks, and signaling through Laurel yard will enhance freight movement fluidity and help expedite movement of future passenger trains through this congested area.

Based on a review of current train operations, including chokepoints, a listing of proposed capital improvements was developed to assure reliability for the proposed passenger operation and sufficient track capacity for accommodating both freight and passenger trains.

The following listing of proposed capital costs was developed by the Amtrak study team, with the assistance of MRL, following a joint Amtrak/MRL inspection trip over the proposed route.

II.A.2. Layover Facility and Equipment Servicing

In the proposed state-supported Billings-Missoula service scenario, a storage track location at both Billings and Missoula will need to be identified for the layover of the trainsets. The storage track at both locations may be made available by MRL under an agreement to be developed later. In addition, facilities will be needed for use by train crews as well as for cleaning supplies, maintenance and communication equipment. A standby 480 volt power source as well as potable water will need to be provided.

A possibility is that daily and routine locomotive/car equipment servicing for this scenario may be provided by the MRL under contract. The cost for such an arrangement is unknown at this time. This would include fueling, watering, light maintenance and related services. If MRL is unable to provide layover tracks, capital costs for such facilities must be added to the total infrastructure costs. It may be

necessary for MRL to add staff in order to perform servicing under this scenario. The Amtrak estimated cost for fueling, watering, light maintenance and related service (using Amtrak standard costing methodology) is included in the annual operating expense summary and is discussed in section V Projected Annual Operating Expenses.

Federally-mandated quarterly and annual locomotive/car inspections and related servicing and repairs might also be accomplished by the MRL under contract. These inspections and related servicing costs are included in the annual operating expense summary. Movement to Amtrak major servicing facilities would not be logistically/operationally practical, given that there is no Amtrak train service at any point on the Billings – Missoula route to provide connections for equipment movements.

II.A.3. "Order of Magnitude" Infrastructure Capital Costs

		$ Millions
a.	Upgrade grade crossing circuits to permit higher speeds.	$0.50
b.	Laurel area track changes and additions to improve train fluidity.	$7.00
c.	CTC Laurel to Billings with double crossovers in middle.	$7.00
d.	Install crossovers at east and west ends of Livingston.	$1.75
e.	Extend sidings at Townsend and Logan.	$2.05
f.	Power crossovers at Carter and Roberts Streets and CTC the long lead at Helena.	$1.15
g.	Extend back track at Elliston.	$0.70
h.	Power crossovers at Madison Street in Missoula and extend CTC from E. Missoula to Madison Street.	$0.45
i.	Two Crew and Mechanical Buildings.	$1.00
j.	Five Quik Trak Machines.	$0.13
	Subtotal	**$21.73**
k.	Contingencies 30%	$6.52
	Total	**$28.25**

II.A.4. Rolling Stock

It is proposed that each trainset required for the service will be operated in "push-pull" mode, with one locomotive and a non-powered control unit (NPCU) or a second locomotive. Given the limited ridership projection for this service (see Section IV), presented in this report, only one coach and one food service car (Diner-Lounge) will be required for each trainset. Other methods of providing food service

than by means of a separate Diner-Lounge car should be explored. The cost of a spare or "protect" set of two power units, one coach, and one Diner/Lounge car is included in the projected capital cost. The spare set is needed to allow for preventative and routine maintenance work on the equipment and to allow cycling on the four trainsets that are required to protect the service.

The projected capital cost of this equipment is **$95 million**. This projection reflects the fact that all or virtually all of the equipment required for the proposed service would have to be purchased new since the availability of rebuilt Amtrak-owned equipment is questionable.

The purchase of new equipment for this proposed service, which would take approximately three years for procurement and assembly, would preferably be part of a larger equipment order. The high upfront design and tooling costs associated with building passenger rail cars make it uneconomical to construct them in small quantities. Amtrak is preparing a comprehensive equipment fleet strategy that will, among other things, address the existing shortage of equipment. Locomotives may also be in short supply, necessitating new unit purchases. Two to three year lead times are required for procurement of new locomotives.

Equipment Capital Costs for Billings – Missoula Service

	Units Required	Units Price (Millions)	Purchase Price (Millions)
Locomotives	5	$5	$25
Cab Cars (NPCU)	5	$5	$25
Coaches	5	$4	$20
Food Service Cars	5	$5	$25
Total	20		$95

II.A.5. Positive Train Control

In addition to the above costs, legal requirements for installation of Positive Train Control (PTC) equipment must be considered.

Positive Train Control is a system designed to prevent train-to-train collisions, train operations above authorized speeds, train operations in maintenance-of-way work zone limits, and the movement of a train through a switch left in the wrong position. The Rail Safety Improvement Act of 2008 mandates that, by December 31, 2015, PTC be installed on those lines of Class-I railroads that carry over five million gross tons of traffic annually, and have either toxic-by-inhalation hazardous materials (TIH) traffic or passenger trains. The Act also gives the FRA (Federal Railroad Administration) the authority to require PTC installation on other rail lines. FRA has recently issued proposed regulations that would require PTC on virtually all rail lines over which scheduled passenger trains operate. At this time, the scope, costs and funding requirements are still to be determined. Amtrak's best current estimate is that PTC installation costs on this route may total approximately **$33 million**. However, this figure could change materially when current uncertainties about the PTC installation requirement are resolved.

III. Schedules

Using Amtrak's standard methodology and reflecting the maximum authorized operating speeds, station dwell times, and 8% recovery time, a proposed schedule was developed as follows in conjunction with the MRL.

Billings…Livingston…Bozeman…Helena…Missoula

Read Down			Mile	City	Mile		Read Up	
7:00 AM	2:00 PM	Dp	0	Billings	358	Ar	3:03 PM	10:03 PM
9:17 AM	4:17 PM		116	Livingston	242		12:48 PM	7:48 PM
10:10 AM	5:01 PM		141	Bozeman	217		12:04 PM	7:04 PM
12:10 PM	7:10 PM		239	Helena	119		10:07 AM	5:07 PM
3:15 PM	10:15 PM	Ar	358	Missoula	0	Dp	7:00 AM	2:00 PM
8:15	8:15			Total schedule time			8:03	8:03

The proposed station stops indicated above reflect Amtrak's initial recommendations for this route based on discussions with various parties. It is possible that these may change or that other stations may be added if this route is considered for possible implementation of service.

IV. Revenue/Ridership Forecast Summary

Based upon a review by the firm AECOM of the schedule developed for the proposed service, annual ridership and ticket revenues have been estimated at 15,300 passengers and $381,000, respectively. The projected ridership and ticket revenue estimates presented in this report reflect the estimated annual results that would be expected had the proposed service, as described herein, been operated for the entire 2009 calendar year. In addition to the proposed trip times developed for the service, the projected ridership and revenue are also based upon an assessment of several other key service attributes including: (1) population size and demographics of the potential geographic area to be served; (2) the proposed level of daily service, i.e., the number of daily frequencies proposed for operation; (3) competing modes of alternative transportation; and (4) the potential connectivity opportunities of the proposed service.

V. Projected Annual Operating Expenses

Projected operating expenses for the assumed annual 2009 operating period have been estimated on a "pro-forma" basis. Based upon this approach, and the schedules and other operating assumptions detailed in this report, projected operating expenses for the annual 2009 period have been estimated to total **$12.6 million**.

The projected 2009 annual operating expense estimate was developed in accordance with standard Amtrak cost allocation methodology which provides for the allocation of direct and various indirect costs by train and route. Direct costs include items such as host railroad maintenance of way and performance incentive payments, fuel expense and direct labor costs for train, engine and onboard food service personnel that can be allocated on a train-specific basis. In addition, other less direct costs for items such as insurance, marketing and advertising expenses, as well as various other service-related support costs for transportation management, reservation and ticketing systems, police and environmental compliance services, have also been included based upon the relevant "drivers" of cost behavior.

VI. Mobilization Costs

Before establishing the proposed service, Amtrak would need to hire, train and qualify necessary employees to perform a number of functions including train movement, and on-board service. It is presently estimated that additional staff totaling 33 positions would be required as follows:

Required Additional Personnel	
Train and Locomotive Engineer Crew	24
On-Board-Service Crew	7
Road Foreman and Trainmaster	2
Total	**33**

The projected cost of hiring, training and qualifying these 33 employees is **$2.8 million.** The majority of this cost is driven by the lengthy classroom and on-the-job training required for new engineers and conductors, and federal regulations that require that they be qualified on the operating rules and physical characteristics of the routes over which they will be operating trains. In addition to classroom training, engineer-trainees are required to complete a minimum of 240 hours of locomotive engine operation and 480 hours of on-the-job training to obtain certification. The qualification process requires engineers to make as many as 36 round trips, accompanied by a qualified engineer, on each line staffed from the crew base where they are employed.

VII. Summary of Key Numbers

Length of Route (miles)	357.7
No. of Host Rail Carriers	1
Maximum Operating Speed	79 MPH
Proposed Scheduled Running Time	8 HRS, 15 MIN.
Estimated Annual Ridership	15,300
Estimated Annual Revenue ($millions)	$0.4
Estimated Annual Operating Expense ($millions)	$12.6
Estimated Annual Operating Subsidy ($millions)	$12.2
Estimated Rolling Stock Cost ($millions)	$95.0
"Order of Magnitude" Infrastructure Capital Cost ($millions)	$28.25
Estimated Mobilization Cost ($millions)	$2.8
Estimated PTC Cost	$33.0

VIII. Conclusions & Recommendations

Amtrak recommends that state policymakers determine if passenger rail service should be developed on this route and, if so, the state should provide the required capital and operating funding. Upon such a commitment, Amtrak will work cooperatively with public and private partners to establish the service.

List of Exhibits

EXHIBIT 3

Acronyms/Definitions

ABS	-	Automatic Block Signals – On a specific section or length of track, an arrangement of automatic signals governing each block.
ADA	-	Americans with Disabilities Act
BNSF	-	The Burlington Northern Santa Fe Railway Company
CTC	-	Centralized Traffic Control – A term applied to a system of railroad operation by means of which the movement of trains over routes and through blocks on a designated section of track or tracks is directed by signals controlled from a designated control point.
MDT	-	Montana Department of Transportation
MRL	-	The Montana Rail Link Railroad.
Push - Pull Mode	-	A method of train operation where the locomotive and NPCU (non powered control unit), a modified engine or passenger car, or a second locomotive, is on opposite ends of a train. The NPCU provides full control of the train, with the locomotive providing the power.
TWC	-	Track Warrant Control – A method to authorize train movement to protect men or machines on a main track within specified limits in a territory designated by the timetable.

EXHIBIT 4

References

a. Montana Rail Link Timetable No. 14, August, 2007

b. Montana Rail Link System Condensed Profile and Track Chart, January 2009

c. Montana Department of Transportation, Various Resources

d. Montana State Rail Plan, Year 2000

e. Montana Branch Line Study Phase II
R.L. Banks Assoc, Inc. September 2004

f. Various Internet Sources

g. Russell's Official National Motor Coach Guide, September 2009

EXHIBIT 5

Route Photographs

1. Billings Station
2. Livingston Station
3. Bozeman Station
4. Helena Station
5. Missoula Station
6. Views of Typical MRL Track Conditions
7. Bozeman Pass Tunnel
8. Logan
9. Continental Divide
10. Heading West Along Scenic Bearmouth Cliff

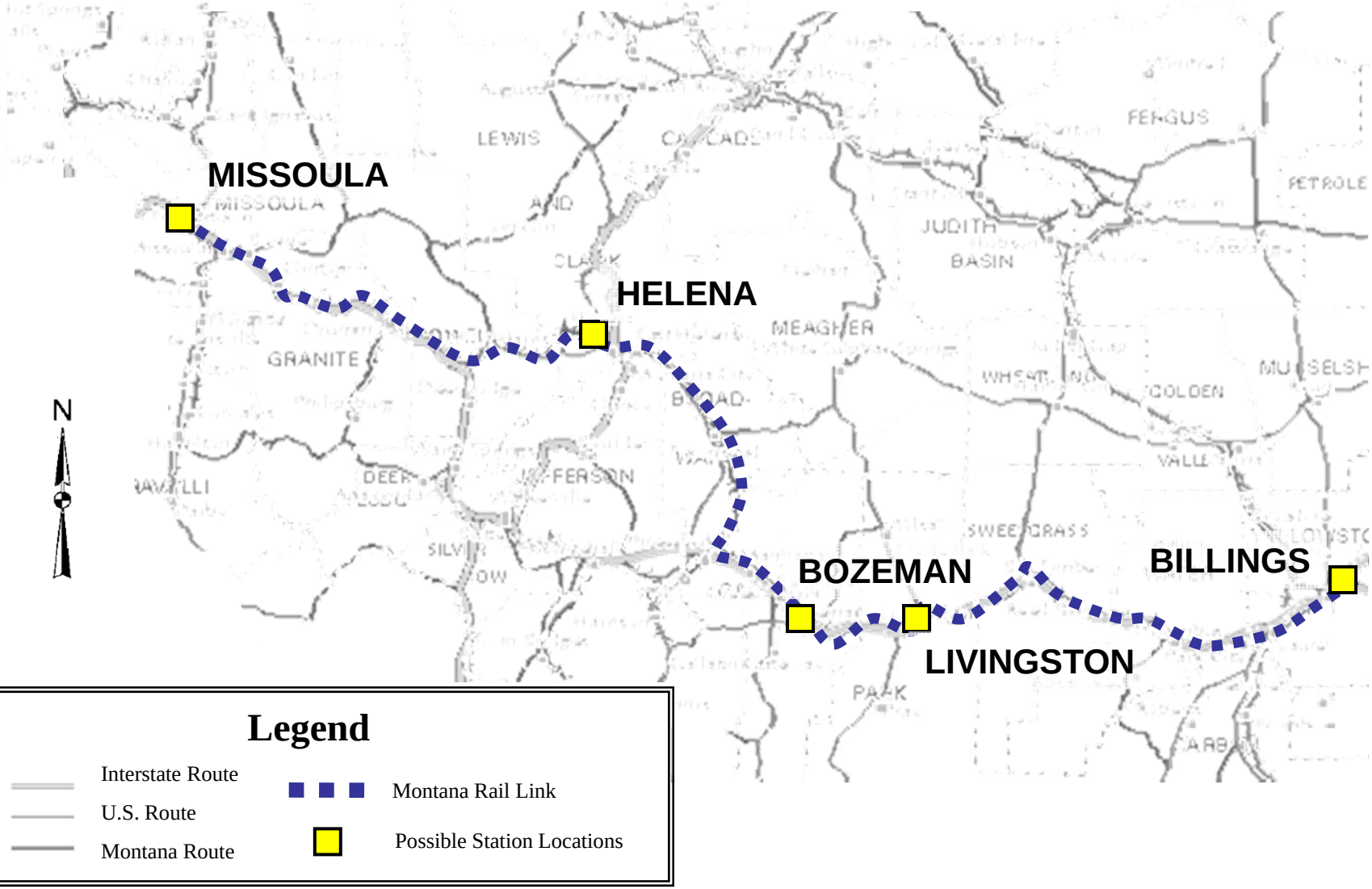


Exhibit 1
Missoula - Billings
Route Map

Scale: 0 20 40 60 80 Miles

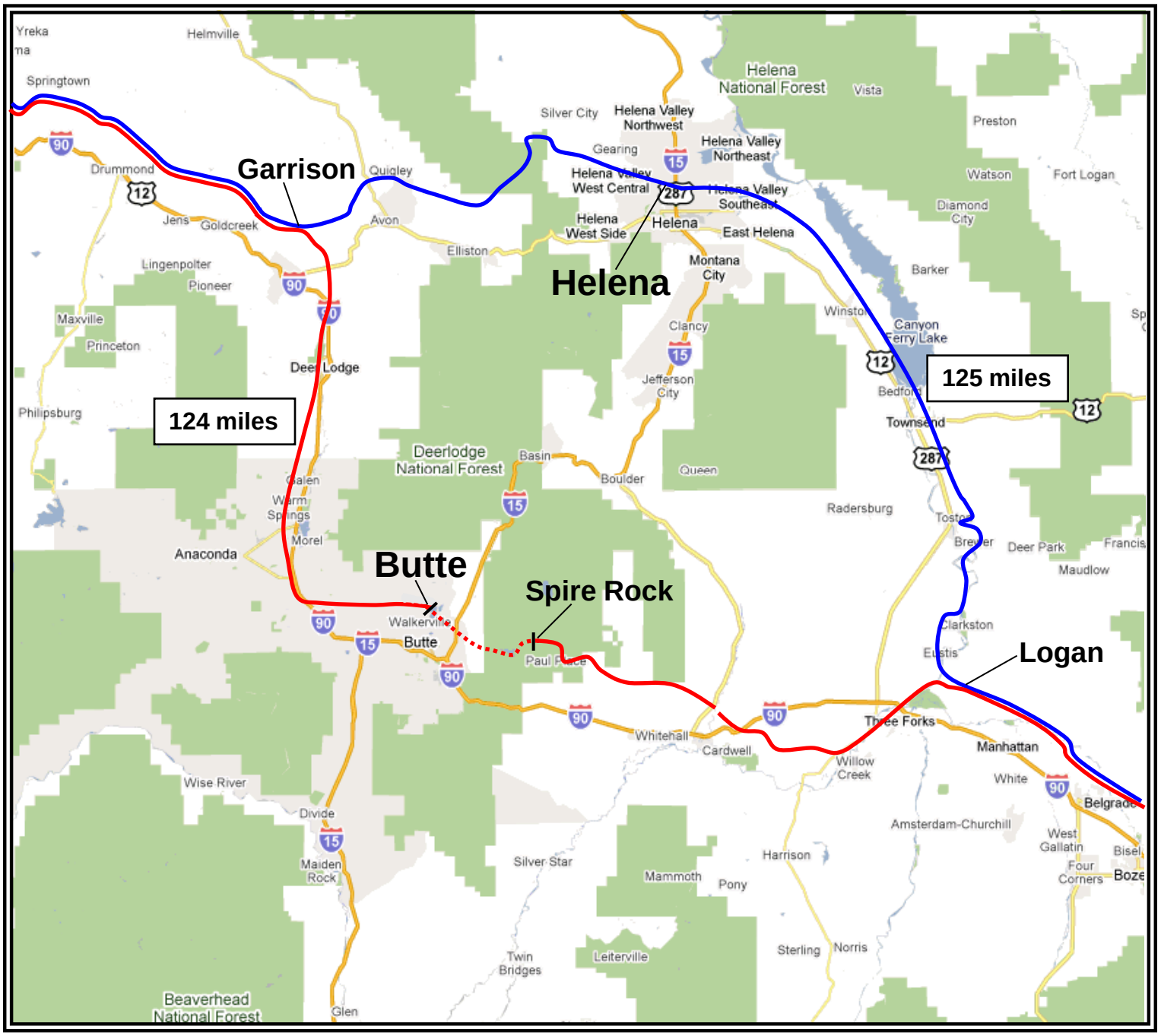


Exhibit 2

Map comparing the proposed route with the route followed by the North Coast Hiawatha in 1979.

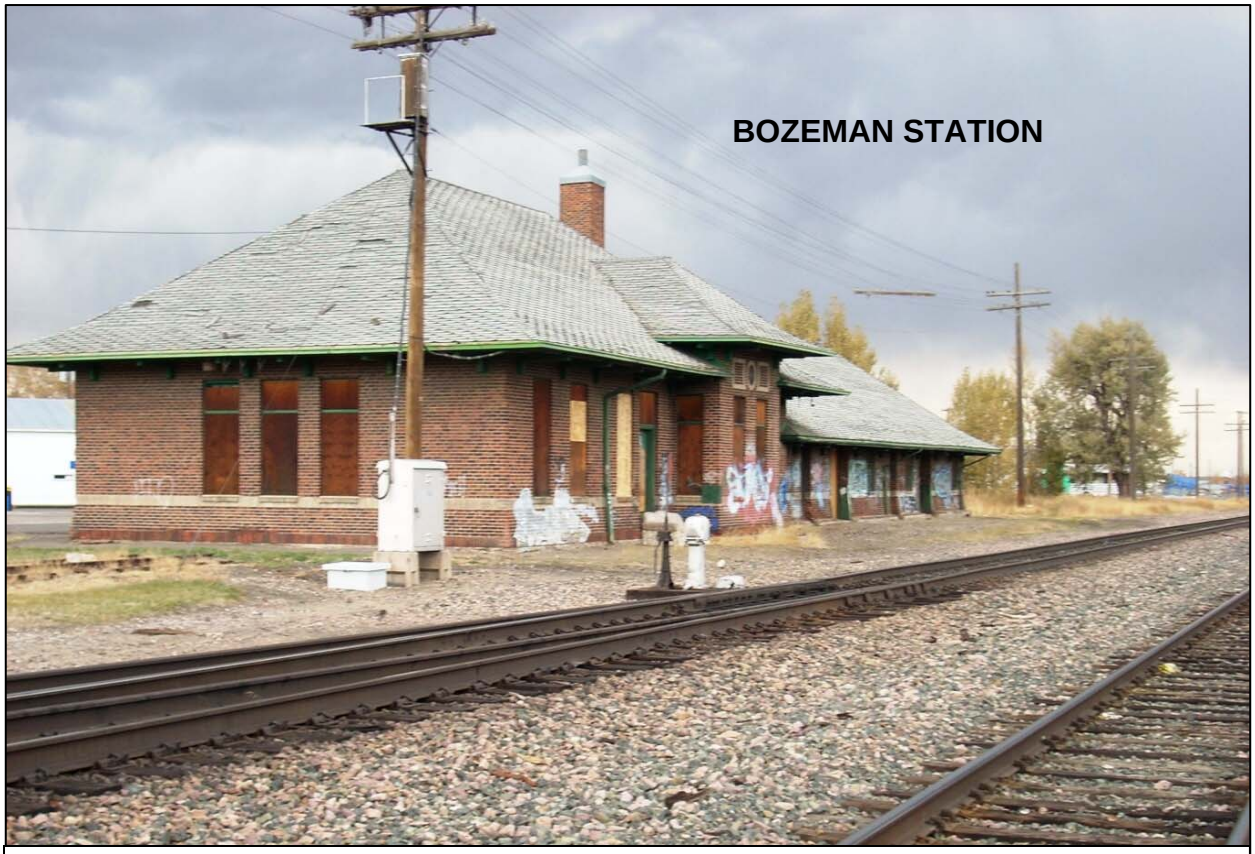
**This station has been renovated for commercial use;
available for restaurant, office, and public functions**

LIVINGSTON STATION

No Existing Platforms

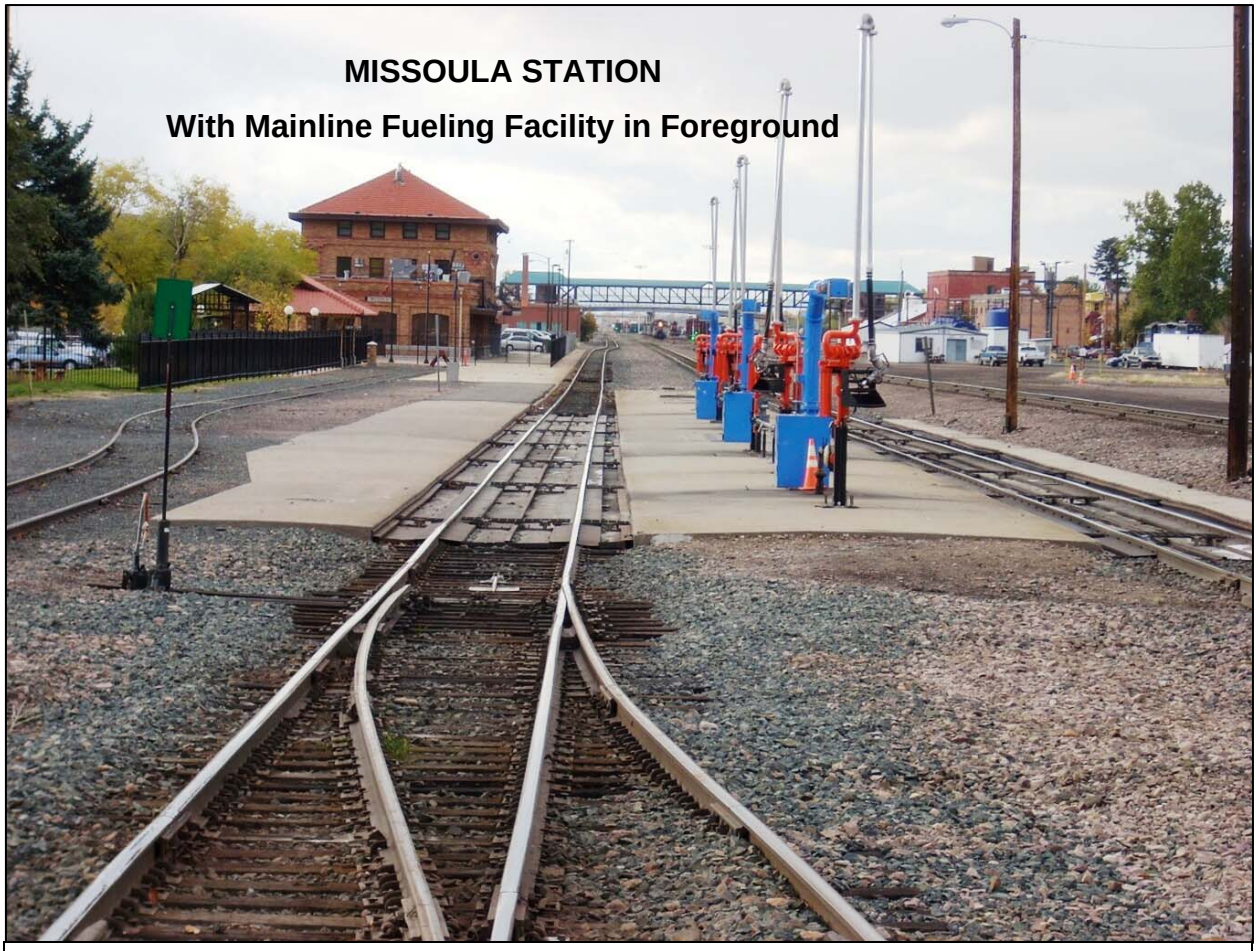
LIVINGSTON STATION

This station has been renovated and is currently used for museum, office space and public meetings



Station is in poor condition, badly graffitied, and would require extensive renovation to be a useable passenger station; there is no existing platform

The station has been modified for use by MRL for freight operations; currently used for crews, yard office, management offices

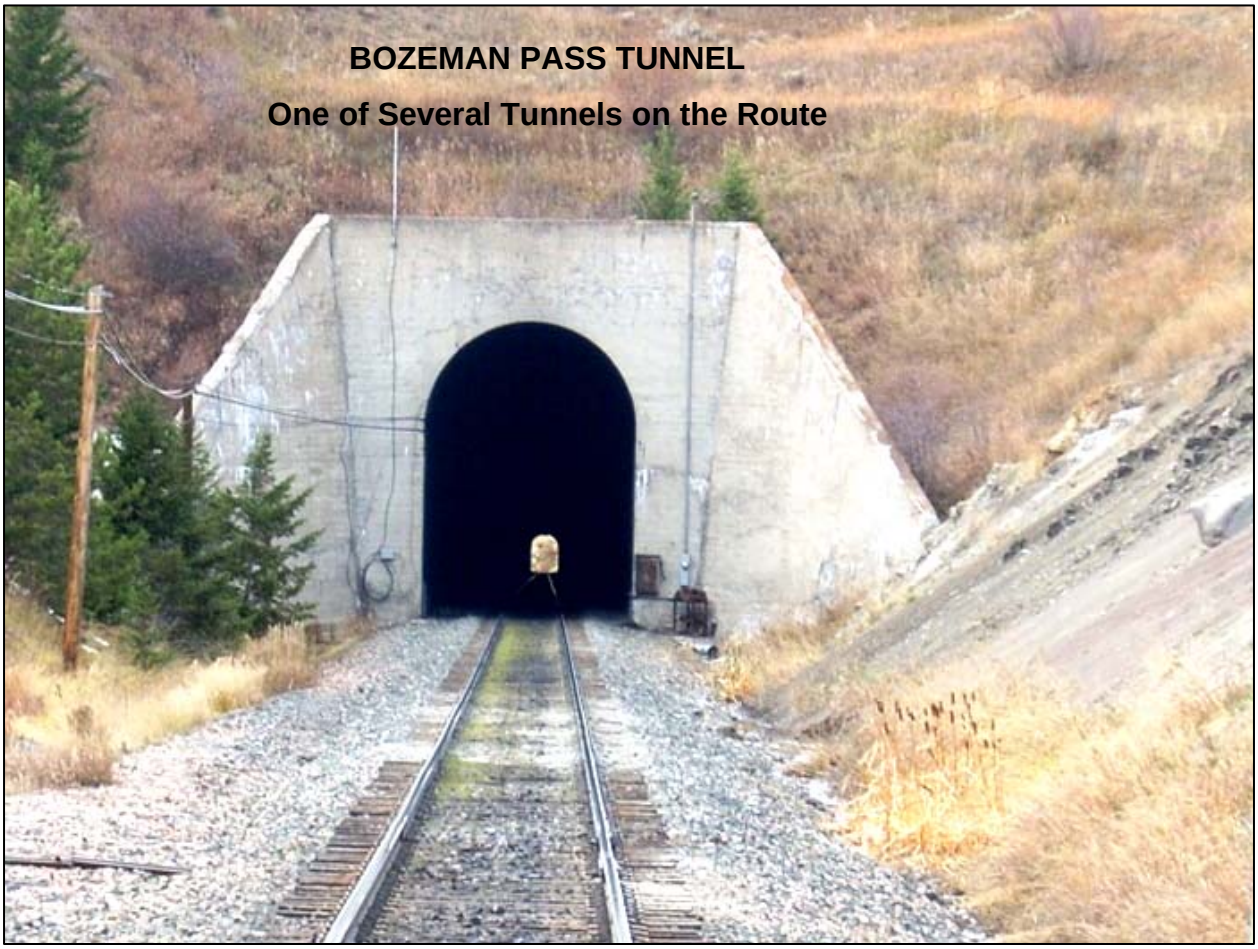


Station building is listed on National Register of Historic Places; currently being used as commercial space and offices

Views of Typical MRL Track Conditions

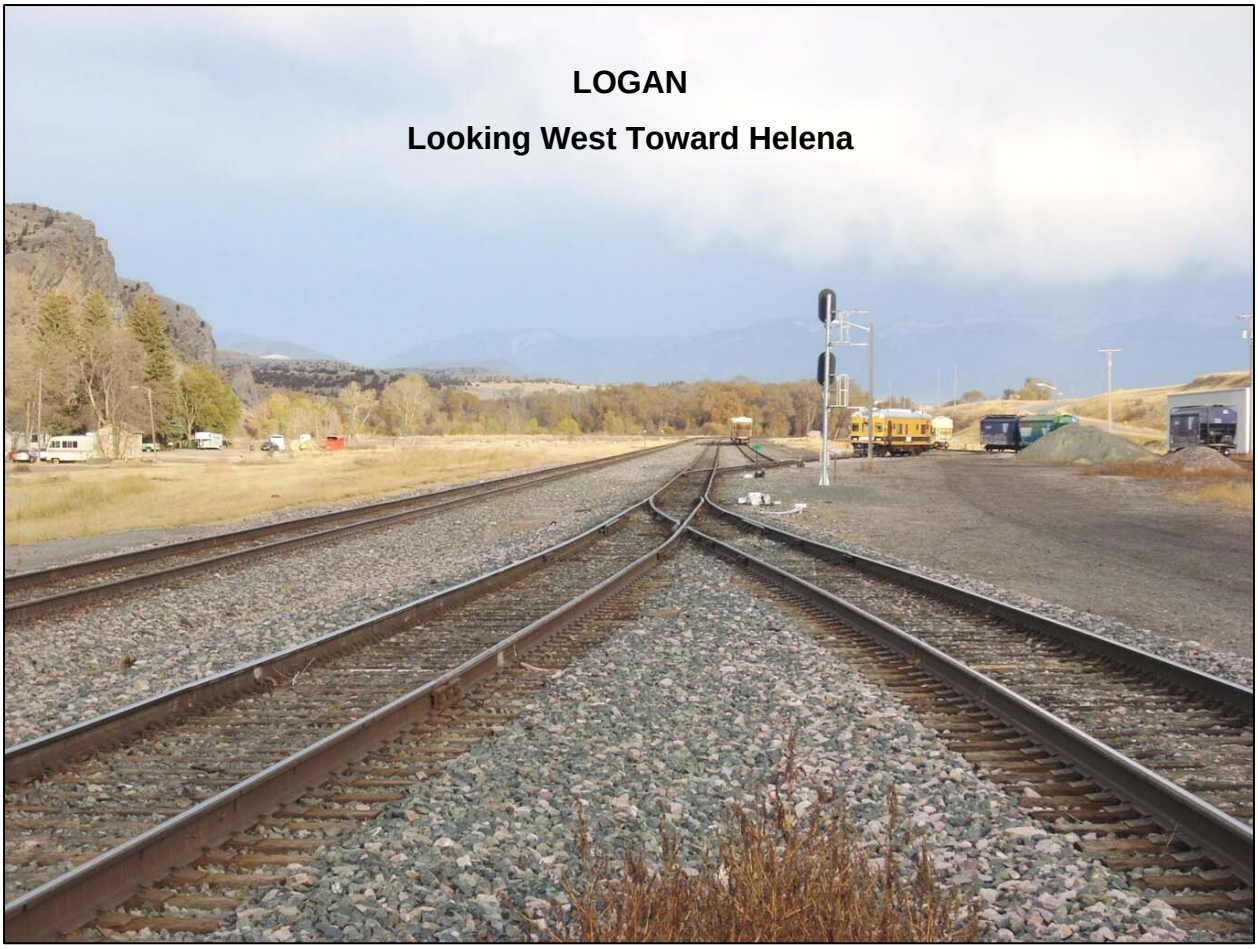
BOZEMAN PASS TUNNEL

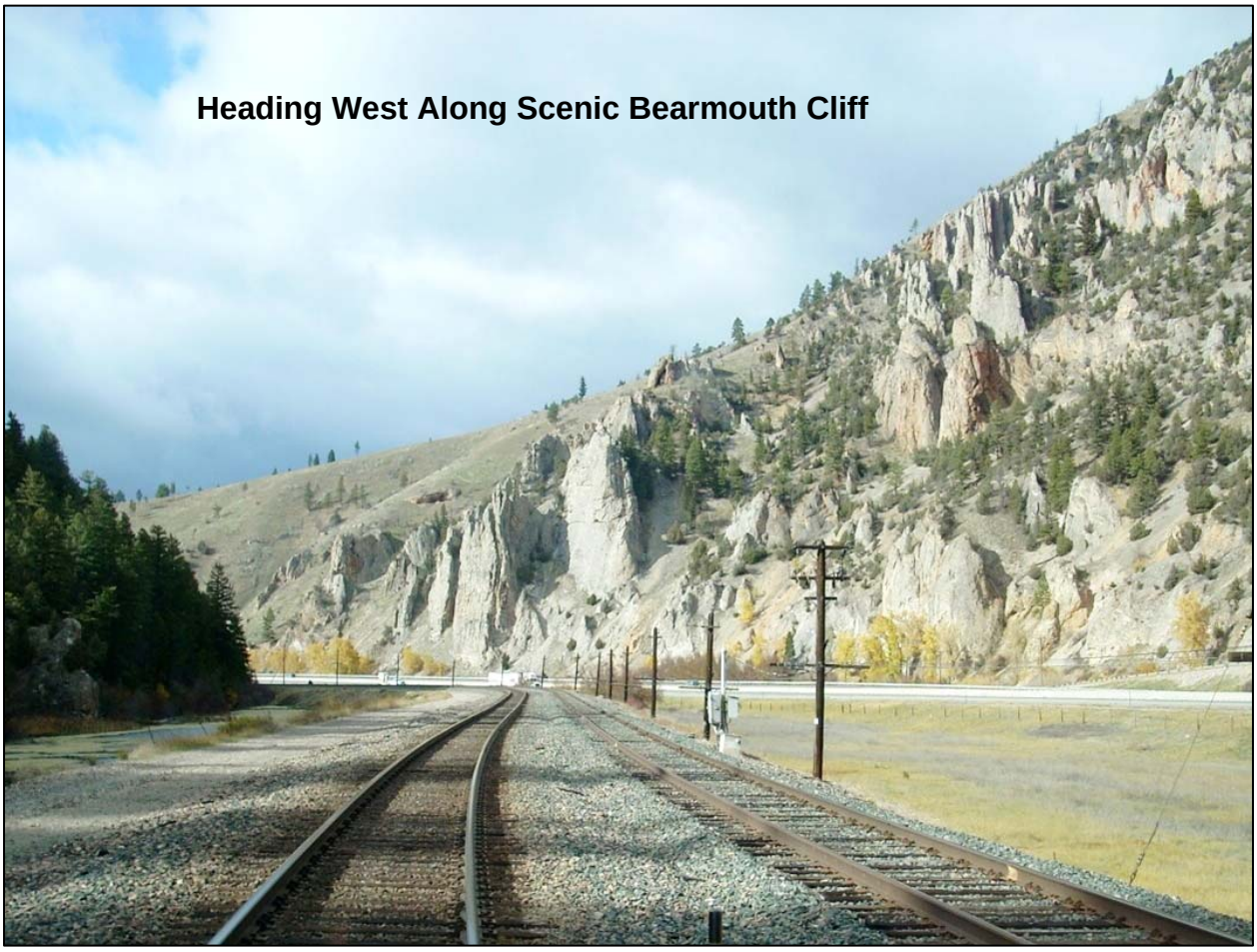
One of Several Tunnels on the Route



LOGAN

Looking West Toward Helena





Heading West Along Scenic Bearmouth Cliff