

Proposed Habitat Conservation Plan  
and  
Issuance of an Endangered Species Section 10(a)(1)(B) Permit  
for the Incidental Take of the Grizzly Bear (*Ursus arctos horribilis*)  
Related to BNSF Operations Within, and Adjacent to, the Northern Continental Divide  
Ecosystem Population of Grizzly Bears  
in Lincoln, Flathead, Glacier, and Toole Counties, Montana

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Title for Proposed Action: Implementation of Habitat Conservation Plan for the Threatened Grizzly Bear (*Ursus arctos horribilis*) Related to BNSF Operations on Approximately 206 miles of Railroad Right-of-Way in Lincoln, Flathead, Glacier, and Toole Counties, Montana.

Unit of Fish and Wildlife Service Proposing Action: U.S. Fish and Wildlife Service, Montana Ecological Services Office, 585 Shepard Way, Suite 1, Helena, Montana 59601

Legal Mandate for Proposed Action: Endangered Species Act of 1973, as amended, section 10(a)(1)(B), as implemented by 50 CFR 17.22 for the issuance of permits for scientific purposes, enhancement of propagation or survival, or for incidental taking.

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## ACRONYMS AND ABBREVIATIONS

AAR - Association of American Railroads	MFWP - Montana Fish, Wildlife and Parks
Amtrak – National Railroad Passenger Corporation	MN – Minimization Measures
BFWD – Blackfeet Fish & Wildlife Department	MOLF - Montana Outdoor Legacy Foundation
BE - Bitterroot Ecosystem	mph – Miles per hour
BNSF - BNSF Railway Company	MT – Mitigation Measures
CFR - Code of Federal Regulations	NCDE - Northern Continental Divide Grizzly Bear Ecosystem
CTC - Centralized Traffic Control	NCE - North Cascades Ecosystem
CYE - Cabinet-Yaak Ecosystem	NFS - National Forest System
CWR - continuously welded rail	NPS - National Park Service
DCA - Demographic Connectivity Areas	PCA - Primary Conservation Area
DMA – Demographic Monitoring Area	Permit - Incidental Take Permit
DNRC - Department of Natural Resources and Conservation	PTC - Positive Train Control
EP – Environmental Policy	Recovery Plan - Grizzly Bear Recovery Plan
ESA - Endangered Species Act	RR – Railroad
FIFRA - Federal Insecticide Fungicide and Rodenticide Act	TM- Trademark
FR – Federal Register	SE - Selkirk Ecosystem
FRA - Federal Railroad Administration	Stracnet – Strategic Rail Corridor Network
GNESA - Great Northern Environmental Stewardship Area	U.S. – United States
GYE - Greater Yellowstone Ecosystem	USC - United States Code
HCP - Habitat Conservation Plan	USDA – United States Department of Agriculture
I&E – Information & Education	USFWS - United States Fish and Wildlife Service (Service)
IGBC - Interagency Grizzly Bear Committee	USFS - United States Forest Service
MDT – Montana Department of Transportation	

## **1.0 INTRODUCTION**

The BNSF Railway Company (BNSF) is applying to the United States Fish and Wildlife Service (USFWS, Service) for an Incidental Take Permit (Permit) pursuant to Section 10 of the Endangered Species Act (ESA). Specifically, BNSF seeks authorization for the incidental taking of grizzly bears (*Ursus arctos horribilis*), which are listed as threatened under the ESA. As a component of the application, BNSF has developed this Grizzly Bear Habitat Conservation Plan (HCP) related to activities by BNSF and other railways operating on BNSF's track within approximately 206 miles of railroad right-of-way within, and adjacent to, the Northern Continental Divide Ecosystem (NCDE) in Lincoln, Flathead, Glacier, and Toole Counties, Montana. If granted, the Permit will authorize take of grizzly bears for a period of seven years, incidental to the otherwise lawful railway operations, including the operations of Amtrak, maintenance and construction activities ("BNSF Operations") within the Permit Area.

BNSF Operations within the Permit Area were originally a portion of the Great Northern Railway. The Great Northern line from Minneapolis to Seattle was completed in 1893. It ran over Marias Pass and along the Middle Fork of the Flathead River. The rail line has been in continuous use since 1893 and is a vital link for the movement of agricultural products, raw materials, and manufactured goods between the Midwest and the Pacific Coast. In addition, it helped to open this part of the country to tourism (*e.g.*, Glacier National Park was created with the help of the Great Northern Railway), agriculture, and industry. Through a series of acquisitions and mergers over many years, the Great Northern Railway eventually became part of BNSF. Rail traffic through the Permit Area fluctuates. Approximately 29 - 34 freight trains and 2 passenger trains (operated by Amtrak) currently pass through the Permit Area every 24 hours.

BNSF and its predecessors have been engaged in railroad operations in the right-of-way for more than 120 years. The railroad right of way through the NCDE has become a vital link in the nation's economy. It has also been deemed a strategic transportation corridor by the Department of Homeland Security. This history distinguishes this HCP from others, for example, that propose new activities (*e.g.*, construction) in undeveloped areas. It also speaks to the need to keep the right-of-way open and well maintained for the benefit of the millions of people who rely on it for jobs, food, transportation and consumer goods.

### **1.1 History of BNSF's Partnership in Grizzly Bear Management in the NCDE**

BNSF Operations are one cause of accidental grizzly bear mortality in the NCDE. The rail lines, built at the end of the 19<sup>th</sup> century, are in grizzly bear habitat. Incidental take occurs because trains collide with grizzly bears on railroad tracks.

In 1991, in response to concerns about grizzly bear mortality due to railroad operations in the area between Marias Pass and Whitefish, BNSF entered into an agreement with federal, state, tribal, and local agencies, conservation groups, and industry representatives to form the Burlington Northern Environmental Stewardship Area. The organization's name was later

changed to the Great Northern Environmental Stewardship Area (GNESA). In addition to BNSF, GNESA members have included representatives from the following agencies, groups, and companies: Flathead National Forest, Glacier National Park, Montana Fish Wildlife and Parks (MFWP), Flathead Land Trust, Montana Department of Natural Resources and Conservation (DNRC), Montana Department of Transportation (MDT), citizen members, the Great Bear Foundation, Glacier area rafting companies, Lewis and Clark National Forest, the Blackfeet Nation, Flathead County, Glacier County, The Nature Conservancy, the Service, NorthWestern Energy Corporation, Flathead Electric Cooperative, Glacier Electric Cooperative, Qwest Communication, and National Parks Conservation Association.

GNESA has fostered a positive working relationship between industry, government, and conservation interests, to implement grizzly bear programs in the area between Marias Pass and Whitefish and on adjacent lands resulting in reduced grizzly bear mortalities. In 2008, this unique public/private partnership model was recognized by the U.S. Department of the Interior with a Cooperative Conservation Award commending the organization for achieving “excellence in conservation through collaboration and partnerships.”

GNESA partnered with BNSF to identify programs and measures that could be implemented to minimize bear-train conflicts in the area between Marias Pass and Whitefish, primarily the identification and removal of potential attractants from the railroad right-of-way, installation of deterrents in physically constrained portions of the railroad right-of-way, a rapid response program for grain spills, and employee education. BNSF also provided funding for GNESA to facilitate bear education programs and bear-related projects such as waste management funding for bear manager positions, and general habitat improvement projects including projects relating to the management of noxious weeds. In addition to its work with GNESA, BNSF has provided funding to support habitat conservation efforts in the Plan Area (as defined below) for several years through the National Fish & Wildlife Foundation. Bear Managers working on the GNESA Technical Committee agree that BNSF’s efforts have minimized grizzly bear take incidental to BNSF Operations. Nevertheless, take of grizzly bears incidental to BNSF Operations still occurs in portions of the Permit Area. Because BNSF Operations are conducted on property it acquired via patents from the State of Montana or the United States or lands acquired by deed from a third party and there is no other practicable means to eliminate the remaining incidental take, BNSF elected to pursue an HCP and Permit under Section 10 of the ESA.

## **1.2 Development of the HCP**

To aid in the development of the HCP, a GNESA technical committee was formed. The committee consisted of bear managers from the state, federal, and tribal agencies that participated in GNESA from its onset. These members are the most knowledgeable biologists actively managing the NCDE population of grizzly bears.

### ***1.2.1 The Role of GNESA in HCP Development***

Since 1991, GNESA has successfully coordinated the efforts between BNSF and federal, state, and tribal agencies to reduce the potential for train-caused mortality and human-caused mortality of grizzly bears in the railway right-of-way. GNESA has convened meetings to discuss grizzly

bear recovery issues, has participated in meetings convened by the Service and others to discuss grizzly bear recovery issues, and has helped BNSF and the Service bring the HCP technical committee together to formulate strategies for minimizing grizzly bear mortality and mitigating take of grizzly bears incidental to BNSF Operations.

GNESA convened a technical committee whose members varied over the years, but which always included at least one representative from MFWP, the National Park Service (NPS), the Blackfoot Fish & Wildlife Department (BFWF), the United States Forest Service (USFS), and BNSF, with the Service providing an advisory role through GNESA.

As described in Section 1.1, the Service and the GNESA technical committee worked with BNSF to reduce grizzly bear train strikes and these measures were ultimately incorporated into this HCP. The technical committee also contributed to the development of the HCP's mitigation program and has become the HCP technical committee. The HCP technical committee evaluated the factors that contribute to human-caused grizzly bear mortality, assessed strategies to help reduce human-caused grizzly bear mortality in the NCDE, and proposed specific solutions that could be funded by BNSF to offset the effects of its incidental take on the NCDE grizzly bear population. The HCP technical committee was instrumental in developing and validating the assumptions necessary to analyze the level of incidental take authorized by the Permit and recommending most of the measures for minimizing and mitigating take of grizzly bear incidental to BNSF Operations.

### ***1.2.2 The Role of GNESA and the MOLF/Administrator in HCP Administration***

GNESA has been reorganized as an advisory committee within the Montana Outdoor Legacy Foundation (MOLF). MOLF is the foundation arm of MFWP and supports a variety of outdoor experiences, access, wildlife projects, and other non-profit partnerships. The types of projects MOLF typically funds include wildlife/wildlands management and care, education, and land access projects. MOLF has been identified by BNSF, and approved by the Service, to act as the Administrator for the HCP. If, for any reason, it is determined that MOLF will not act as the Administrator, BNSF will select a new Administrator that is acceptable to the Service. Throughout this HCP "Administrator" shall refer to either MOLF or an alternative Administrator.

The HCP includes compensation for the Administrator for HCP administration, monitoring, reporting, coordination, and supporting the HCP technical committee. The Administrator will also serve as the clearinghouse for information on the status of the HCP and the activities of the HCP technical committee.

The roles and responsibilities of BNSF, the Service, the Administrator, the BFWD<sup>1</sup> MFWP, Amtrak, and the HCP technical committee are described in the Implementing Agreement contained in Appendix A.

### ***1.2.3 The Role of HCP Technical Committee***

The HCP technical committee will be comprised of, at minimum, one representative from each of the following: BNSF, MFWP, Amtrak, and the BFWD (should BFWD choose to participate). An offer to participate will be extended to Glacier National Park and the USFS. The Service will maintain an advisory role. The HCP technical committee will serve the following role in implementation and administration of the HCP:

1. The HCP technical committee will serve as a forum for communication of HCP-related issues and conflict mitigation actions funded by the HCP.
2. The HCP technical committee will meet at least once a year (meetings to be convened by the Administrator) to review the circumstances surrounding any reported train strikes in the Permit Area; to assess grizzly bear management issues in the Permit Area and Plan Area; to report on conflict mitigation actions implemented in the Plan Area through HCP mitigation funds; to discuss literature relevant to the issues in the HCP corridor; to develop consensus-based recommendations for conflict mitigation actions and programs for funding for the following year; and to evaluate conflict mitigation actions implemented by HCP funds.
3. The HCP technical committee will coordinate all public statements about train-related grizzly bear incidental take in the Permit Area.
4. The HCP technical committee members will provide annual reports to Administrator regarding the progress of implementation of the HCP mitigation program and conflict mitigation actions.
5. The HCP technical committee will provide consensus-based recommendations pertaining to adaptive management under the HCP.
6. The HCP technical committee will coordinate with other agencies on opportunities and applications for grants that advance the purposes of the HCP, including section 6 grants through the Service's HCP Land Acquisition Program.

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<sup>1</sup> As of the date of this HCP there is some uncertainty about whether and how the BFWD will participate in this HCP. BNSF wants very much for BFWD to continue as a partner in this work, but understands that there are other factors that the Blackfeet Nation must consider before entering into the Implementing Agreement. All subsequent references to the Blackfeet Nation or BFWD reflect the shared goal of BNSF and the Service that the BFWD will become a Party to the Implementing Agreement and participate as a member of the HCP technical committee. and in the Implementing Agreement. Should the Blackfeet Nation choose not participate in whole or in part, mitigation funding may be shifted to MFWP or another entity able to engage in mitigation projects that are relevant to this HCP so that all aspects of the HCP for which the technical committee is responsible will be completed as contemplated herein and in the Implementing Agreement. Regardless of whether BFWD chooses to become a Party to the Implementing Agreement, projects proposed by the BFWD and/or projects on the Blackfeet Reservation that advance the biological goals and objectives of the HCP will be eligible to receive funding through the HCP technical committee.



7. Recommendations made by the HCP technical committee to BNSF will be guided by the principles set out in this HCP, *i.e.*, the minimization and mitigation of grizzly bear take as a result of BNSF Operations to the maximum extent practicable.

### **1.3 Public Scoping During Development of the HCP**

When BNSF decided to pursue a Permit for incidental take of grizzly bears, the Service and BNSF initiated public scoping. The scoping period extended between February 11, 2004 and April 15, 2004. A press release was prepared and distributed to a variety of Montana media, including several local newspapers and public service announcements on local radio stations.

Public scoping meetings were held in Kalispell, Montana on February 10; in Essex, Montana on February 11; and in Browning, Montana on February 12, 2004. The scoping meetings were structured in an open house format. Through the scoping notice and the scoping meetings, BNSF and the Service invited public comment on the minimization and mitigation measures proposed at that time and on issues of concern to be considered in the National Environmental Policy Act compliance process. A scoping fact sheet encouraged participants to provide input on the following topics:

1. The overall scope of the project.
2. Identification of railroad operation and maintenance activities that may affect grizzly bears in the railway corridor.
3. Suggestions to reduce the effects of railroad operation and maintenance on grizzly bears.
4. Perspectives regarding other activities in the railway corridor that may contribute to train-caused and human-caused mortality of grizzly bears.
5. Suggestions to reduce the risk of train-caused and human-caused mortality of grizzly bears.
6. Specific information sources that would strengthen the analysis of take in support of the HCP.

A total of 15 people attended the three public scoping meetings. Letters were received from Glacier National Park, MFWP, The Great Bear Foundation, and from two private individuals. Defenders of Wildlife and four private individuals submitted comments via email. A summary of scoping comments is contained in the *Scoping Report for the BNSF Railway Grizzly Bear HCP* (USFWS 2004).

The comments largely supported the measures already included in the draft HCP at the time. The public suggested BNSF also examine its ability to limit train speeds, modify its containers to eliminate spills, attach high frequency sound warning devices to deter wildlife, fence the corridor, and incorporate crossing structures. The public identified potential measures purported to reduce incidental take in the Permit Area but did not identify concerns relative to the effects of implementing an HCP on other aspects of the human or natural environment.

BNSF and the Service recognize that considerable time has passed since the initial scoping. They also recognize that: (1) the grizzly bear population has grown and is increasing (Kendall et al. 2009, Mace and Roberts 2012, Costello et al. 2016, Costello 2020 *in lit*, Costello and Roberts 2022), (2) grizzly bears are ranging far beyond the original NCDE recovery zone boundaries, (3) train-caused mortality attributed to attractants in the right-of-way has decreased, and (4) during the time that 1 through 3 has occurred, BNSF has voluntarily implemented most of the avoidance and minimization measures described in Section 5.3 of this HCP. During the preparation of this HCP, the status of the grizzly bear population and the measures implemented throughout the NCDE have been a topic of conversations at Interagency Grizzly Bear Committee (IGBC) and NCDE subcommittee meetings. Meeting summaries are available at <http://igbconline.org/n-continental-divide-subcommitte/>. Through these meetings, the public has been briefed on the status of grizzly bear recovery in the NCDE, grizzly bear mortalities in the NCDE and has had opportunities to provide input into grizzly bear mortality issues, including the measures BNSF is voluntarily implementing in the proposed Permit Area.

The public again reviewed and commented on the HCP after the Service published a notice of availability of the Permit Application and HCP in the Federal Register on January 12, 2021 (85 FR 2445-2446). Responses to all public comments will be made available by the Service with the publication of its final Section 10 Permit Issuance decision documents. Based on the public comments on the HCP Permit Application, additional changes were incorporated into this Final HCP.

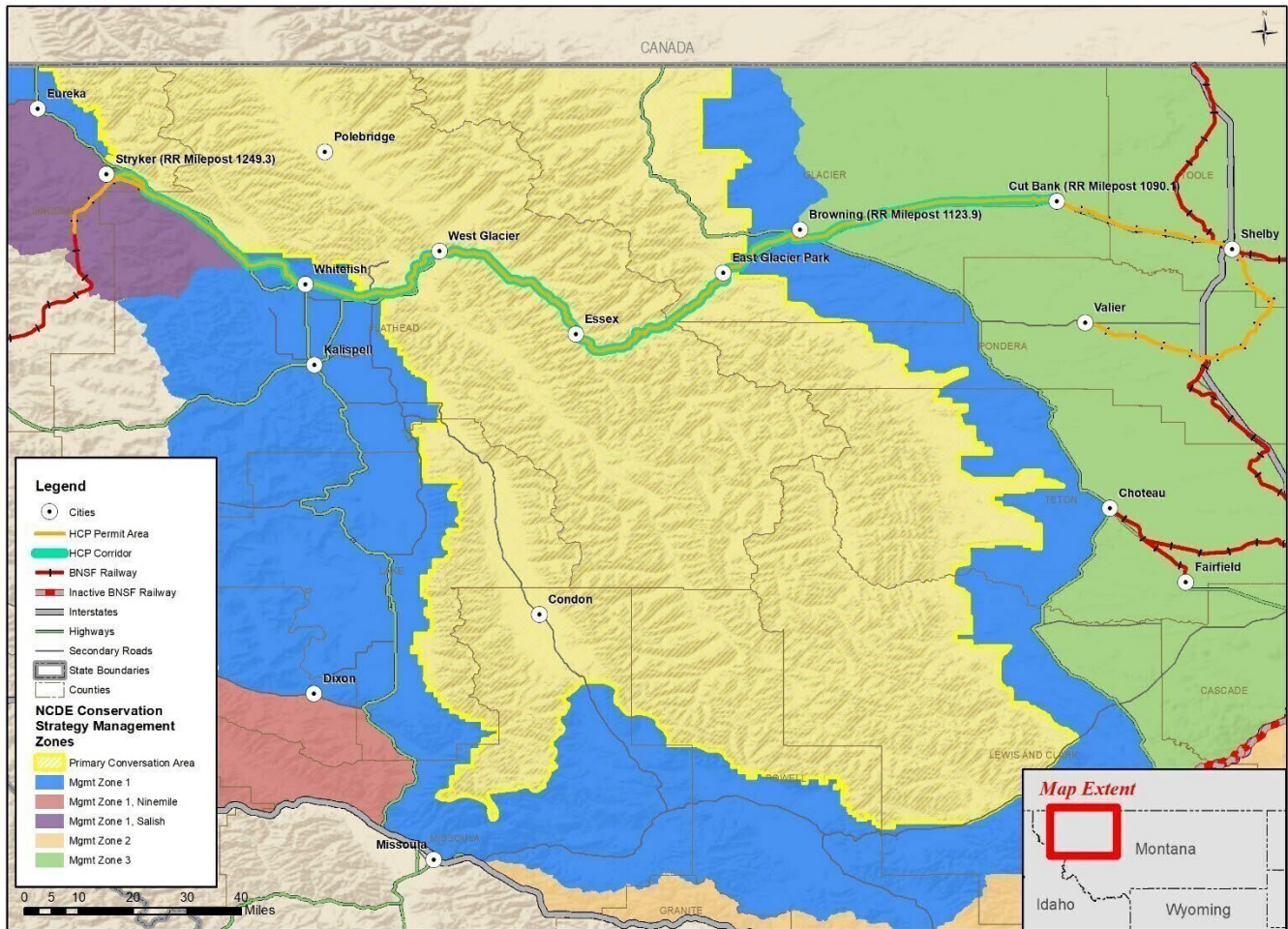
## **1.4 Elements of the HCP**

### ***1.4.1 HCP Permit Area***

The “HCP Permit Area” includes approximately 206 miles of railroad right-of-way between Brimstone West, Montana (RR Milepost 1253.8) to the west and Shelby, Montana (RR Milepost 1066) to the east, including the spur line that extends southwest to Valier ([Figure 1](#)). This area generally incorporates the area of known incidental take of grizzly bears attributed to BNSF Operations in Montana and this is the area for which BNSF has requested authorization for incidental take.

BNSF Operations through the HCP Permit Area are generally conducted on property it acquired via patents from the State of Montana or the U.S. or lands acquired by deed from a third party. Property adjoining or adjacent to the right-of-way includes federal, state, and private lands.

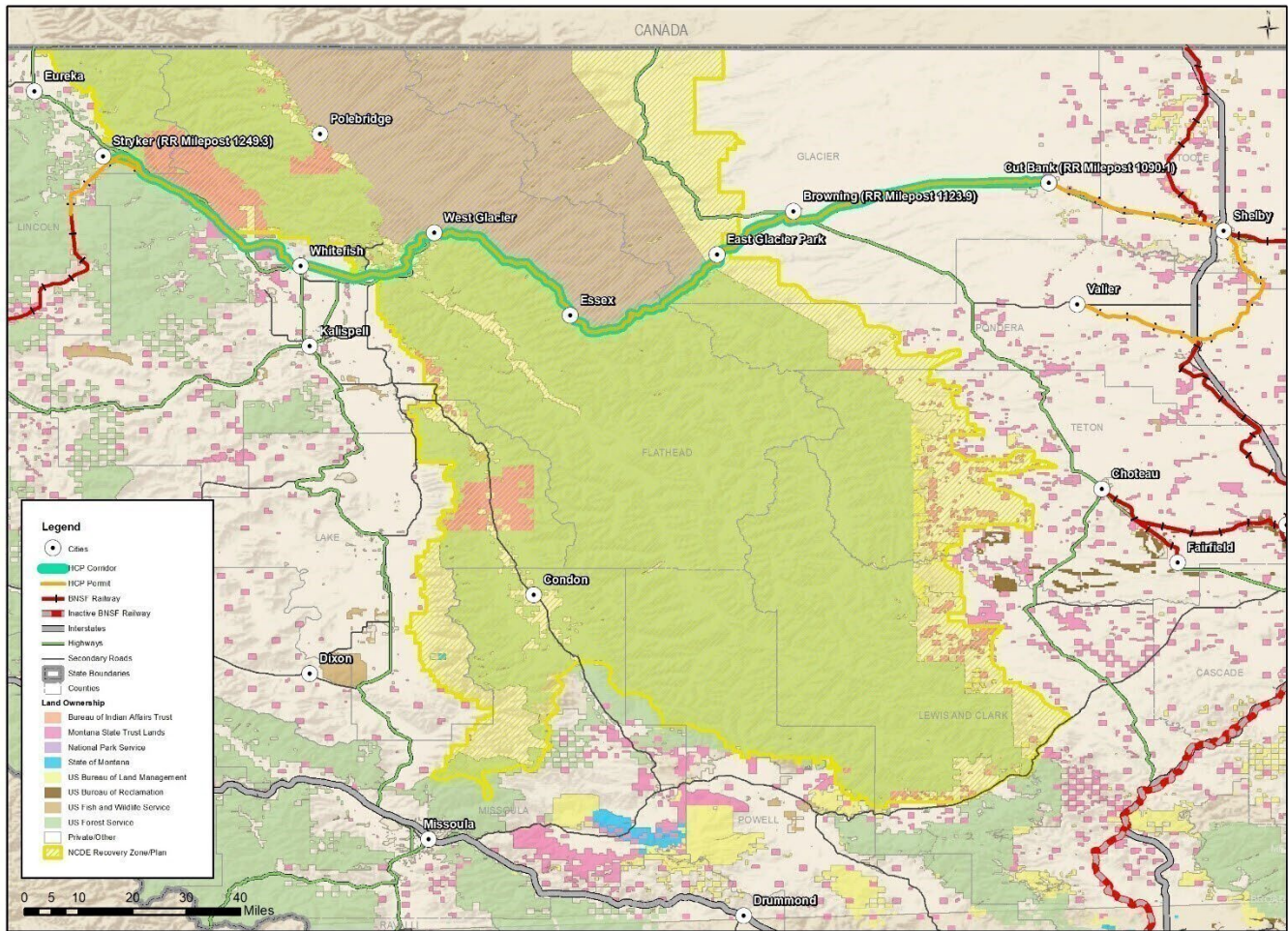
**Figure 1. Location and Vicinity**



Terrain Source: Esri World Terrain Basemap  
 Coordinate System: GCS WGS 1984  
 Datum: WGS 1984

From Brimstone West, Montana east to Conkelly, Montana the HCP Permit Area is bounded by the Stillwater State Forest and private lands to the north and private lands and the Kootenai National Forest to the south (Figure 2). From Conkelly, Montana east to East Glacier, Montana, the HCP Permit Area is generally bounded by Glacier National Park to the north and the Flathead National Forest to the south. From East Glacier, Montana to Cut Bank, Montana, the HCP Permit Area traverses the Blackfoot Nation. The HCP Permit Area abuts private lands from Cut Bank, Montana to the eastern boundary at Shelby, Montana.

**Figure 2. Land Ownership in the HCP Plan Area**



Basemap Source: Esri World Terrain Basemap.  
 Coordinate System: GCS WGS 1984  
 Datum: WGS 1984  
 Units: Degree  
 Acreage and Railway mileage calculated in NAD\_1983\_2011\_StatePlane\_Montana\_FIPS\_2500 Lambert\_Conformal\_Conic

### 1.4.2 HCP Corridor

The “HCP Corridor” is a subset of the Permit Area extending for approximately 160 miles between Cutbank, Montana (RR Milepost 1090.1) to the east and Stryker, Montana (RR Milepost 1249.3) to the west (see Figure 1).

The HCP Corridor includes the portion of the HCP Permit Area where BNSF has implemented avoidance and minimization measures since the 1990s. Most grizzly bear train-strikes attributed to BNSF Operations have occurred in the HCP Corridor.<sup>2</sup>

<sup>2</sup> There was a single grizzly bear mortality near Shelby, MT in 2017 and two grizzly bear mortalities near Trego, MT in 2019. No attractants or other contributing factors were identified at the site of these mortalities.

### **1.4.3 Plan Area**

The Plan Area includes the Permit Area as well as the greater NCDE (see Figure 1). The HCP mitigation measures would first be applied within the HCP Permit Area but may be applied anywhere in and around the NCDE (*i.e.*, the Plan Area) where the HCP Technical Committee determines the measures will be most beneficial to the population and most likely to offset the authorized incidental take. Grizzly bear management in the NCDE is described in Section 3.4. Landownership in the Plan Area is primarily public lands administered by state or federal agencies (84 percent) (see Figure 2). The remaining lands are Tribal, State, and local governments and private ownership. Federally managed land is primarily divided among Glacier National Park and five National Forests (Flathead, Helena, Kootenai, Lewis and Clark and Lolo). Thirty-two percent of all lands inside the Plan Area are designated Wilderness Areas.

### **1.4.4 HCP Covered Species**

This HCP covers the federally listed grizzly bear.

### **1.4.5 Permit Duration**

BNSF intends to implement a seven-year HCP in exchange for a seven-year Permit. The term of the HCP and Permit were determined in consultation with the Service. BNSF expects that within seven years, the NCDE population of grizzly bears will be delisted and the post-delisting monitoring period of the population will be complete. At that time, it is anticipated that the NCDE grizzly bears population will continue to be managed through a conservation strategy implemented through Federal, Tribal, State, and local stakeholders in the region (NCDE Subcommittee 2020). At the end of the Permit duration, BNSF may voluntarily continue its HCP conservation strategy. If the NCDE population is not successfully delisted within the seven-year Permit duration, and incidental take is expected to continue to occur, BNSF may apply for a Permit renewal.

### **1.4.6 HCP Covered Activities**

The HCP covers all BNSF Operations (as defined in Section 1.0) in the railroad right-of-way within the Permit Area. These activities are described in greater detail in Section 2.0 below.

## **2.0 PROJECT DESCRIPTION AND COVERED ACTIVITIES**

This section describes railroad operations and procedures in the Permit Area, including the various regulations governing BNSF operations.

### **2.1 BNSF Operating Procedures**

#### **2.1.1 Environmental Principles**

BNSF Railway believes it is both good citizenship and good business to minimize its impact on the environment, and it is proud of the role it plays in safely and efficiently moving millions of tons of consumer and agricultural products and other freight across the country every day.

BNSF promotes operations that protect the environment. BNSF's Environmental Policy (<http://www.bnsf.com/in-the-community/environment/>) and environmental commitments lay the groundwork for minimizing and mitigating take of grizzly bears incidental to BNSF Operations in the Permit Area.

### ***2.1.2 Operating Regulations in the Permit Area***

The safe and efficient operation of trains in the Permit Area is governed by rules, procedures, and practices that are contained in federal statutes, rules, regulations and railroad documents including, but not limited to, the following documents (as updated)<sup>3</sup>:

- General Code of Operating Rules<sup>4</sup>;
- BNSF Air Brake and Train Handling Rules;
- BNSF System Special Instructions;
- BNSF Signal Aspects and Indications;
- BNSF Montana Division Timetable;
- BNSF Montana Division General Orders, Order 515;
- BNSF Montana Division Superintendent Notices; and
- BNSF Train Dispatcher's/Operator's Manual.

Regulatory requirements pertaining to railroad transportation are generally found in the Code of Federal Regulations (CFR), Title 49 (Transportation), Volume 4, Chapter II.

### ***2.1.3 Safety in the Permit Area***

Freight cars and locomotives are subject to 49 CFR Part 215 (Railroad Freight Car Safety Standards) and 49 CFR Part 229 (Railroad Locomotive Safety Standards). The Permit Area is part of an integrated, national network of freight railroads. Freight cars and locomotives are freely interchanged between rail carriers, subject to the regulations and industry standards described above, including those defined by the Association of American Railroads (AAR)<sup>5</sup>. The AAR specifications are contained in various publications of the association, including the Field Manual of the Interchange Rules and the Manual of Standards and Recommended Practices. The consistency provided by these regulations and standards

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<sup>3</sup> With the exceptions noted below, these documents are internal BNSF documents that are not generally available from public sources. Applicable documents have been provided to the Service, who will maintain copies.

<sup>4</sup> The General Code of Operating Rules is a set of operating rules for railroads in the United States. It is used by Class I railroads west of the Chicago, most of the Class II railroads, and many Short-line railroads. The 7th Edition of the General Code of Operating Rules (effective April 1, 2015) is implemented by numerous railroads including BNSF, Union Pacific Railroad, Canadian Pacific Railway, and Montana Rail Link.

helps ensure the safety and quality of freight cars and locomotives operating throughout the nation's rail system.

BNSF partners with more than ten labor unions that represent BNSF employees with varying degrees of responsibility for BNSF Operations in the Plan Area. In addition, BNSF works with independent contractors that support BNSF Operations on and off the right-of-way. The job descriptions and responsibilities of these employees and contractors are established in their contracts – many of which are national contracts. Therefore, it may not be possible to alter these job descriptions and responsibilities.

Engineers and conductors are trained and tested on operation, safety and health, and train handling rules. These employees also attend rules classes annually. Under 49 CFR Part 240 (Qualification and Certification of Locomotive Engineers), engineers must be certified before performing service, and must recertify every three years.

The track structure in the HCP Permit Area is designated as Class 4<sup>6</sup>, and all rail in the Permit Area is “continuously welded” rail (CWR)<sup>7</sup>. Track maintenance standards and requirements are identified in 49 CFR Part 213 (Track Safety Standards) and in internal BNSF processes, procedures, and instructions.

BNSF conducts regular and rigorous track, bridge and rail inspections. BNSF uses ultrasound, radar and machine vision systems to look deep inside the rails and supporting crossties for tiny flaws imperceptible to the human eye. This work is done using manned and unmanned track geometry rail cars “Geo Cars” that travel around the BNSF system - including through the Permit Area - to measure track wear and tear. Data from the Geo Cars is collected and analyzed to identify and prioritize track maintenance.

In addition to the track inspection done by Geo Cars, the track in the Permit Area is visually inspected at the frequencies required by the Federal Railroad Administration (FRA). Qualified inspectors travel through the area looking for any variations from the established track standards to ensure safe train operations at authorized speeds.

BNSF also has 39 trackside warning detectors in the Permit Area (more than the number required by the FRA). These detectors evaluate passing trains and alert on-board employees (engineers and conductors) of potential or actual equipment defects or failures.

BNSF has installed Positive Train Control (PTC) infrastructure on its network, covering more than 11,500 route miles, including the Permit Area. PTC stops a train before certain types of accidents occur. It is a predictive, advanced safety technology designed to prevent train-to-train collisions, enforce speed limits, protect roadway workers and equipment, and prevent the movement of a train through an improperly positioned switch.

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<sup>6</sup> 49 CFR 213.9 identifies the maximum allowable speed for freight and passenger trains that meet all of the prescribed standards of Part 213 for a particular class of track.

<sup>7</sup> CWR replaces jointed rail. Continuously welded rail provides for a better ride and requires less maintenance than jointed rail because there are fewer joints.

#### **2.1.4 Speed of Trains in the Permit Area**

Based on current track design, trains<sup>8</sup> in the HCP Permit Area may operate at speeds between 25 and 79 miles per hour (mph). Additional speed restrictions are currently in place at specific locations within the Permit Area based on existing track features. Speed limits are dictated by many factors. First is the safety of the people who work and/or travel through the right-of-way. Speeds are set to make sure that train crews, maintenance crews, passengers and people crossing the right-of-way are kept safe. Second, speeds are set to account for the physics of trains in motion. Acceleration, braking, the geometry of the tracks, curvature, and the condition of the right-of-way (e.g., weather, maintenance) all factor into train speed. Third, the speed limit is the maximum speed allowable in a particular area. For example, a loaded freight train going up-hill is likely traveling slower than the maximum speed limit. Moreover, speeds are restricted in areas where maintenance crews are working or where track repairs are scheduled. In other words, trains often travel at speeds lower than the limit. Efficiency is also a factor in setting speed limits. Changing speeds may result in less efficient use of fuel and increased noise and emissions, which would affect the environment in and around the right-of-way. Last, slowing trains would affect interstate commerce. It would impact the timely delivery of goods from inland states to the ports, and it would affect the delivery to inland states of goods arriving in the ports. It would also impact the passengers travelling on Amtrak. Many of these considerations are embodied in federal statutes and regulations that govern BNSF's operations.

#### **2.1.5 Train Frequency, Volume, and Seasonality in the Permit Area**

BNSF is a common carrier and, as such, has a statutory duty to provide "transportation or service on reasonable request" 49 United States Code (U.S.C) 11101(a). On average, current rail traffic consists of approximately 29-34 freight trains and 2 passenger trains (operated by Amtrak) per day. These average figures are lower than the capacity of the line through the Permit Area. The frequency and volume of traffic through the Permit Area is seasonal (e.g., there are more frequent grain shipments at harvest time and more containers filled with consumer goods before the holiday season). It is also dependent on traffic in the ports, which can be affected by tides, bad weather at sea, working hours for longshoremen, and geo-political considerations (all of which are out of BNSF's control). Actual traffic at a given point in time may be higher than average. There is no evidence that greater frequency or volume through the Permit Area results in a higher number of grizzly mortalities.

Further, grizzly bears are documented crossing the right-of-way at all times of day and grizzly bear strikes have similarly been reported at all times of day (Waller 2005). There is no evidence that changing the schedule of trains will reduce grizzly bear train strikes.

#### **2.1.6 Track Control in the Permit Area**

The BNSF Railway in the Permit Area is part of BNSF Montana Division Hi Line and Kootenai River Subdivisions. Train operations and mechanical and maintenance activities are generally managed and coordinated by the Montana Division headquartered in Whitefish, Montana.

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<sup>8</sup> Currently, light engine consists (e.g., a business car or Helper) may operate at passenger speeds, not to exceed 79 MPH on track through the Permit Area.



All trains in the Permit Area operate according to Centralized Traffic Control (CTC), a form of railway signaling that consolidates train routing decisions that were historically executed by local signal operators or the train crews themselves. Movement in the Permit Area is coordinated through train dispatchers at the BNSF Network Operations Center in Fort Worth, Texas.

### ***2.1.7 Other Operators and Railcar Ownership in the Permit Area***

BNSF operates many of the trains that run through the Permit Area and is responsible for maintaining the right-of-way. Amtrak trains also operate in the Permit Area on BNSF rail lines pursuant to the current version of the Agreement Between National Railroad Passenger Corporation and Burlington Northern Railroad Corporation and Atchison, Topeka and Santa Fe Railway Company, dated September 1, 1996, and amended August 1, 2017 (Amtrak Operating Agreement). Amtrak's obligations under the HCP and the Permit are addressed in the Implementing Agreement contained in Appendix A.

Importantly, BNSF does not own all railcars that travel through the Permit Area but is obliged to carry a customer's load (49 U.S.C §11101). Similarly, BNSF does not own the Amtrak equipment that operates in the Permit Area. Commenters suggested that BNSF could modify locomotives and rail cars to: (1) prevent product leakage in the right-of-way or (2) reduce the risk of an injury to a grizzly bear struck by a train. BNSF cannot unilaterally modify the equipment it owns, or the equipment of others (private railcars and Amtrak equipment) that run across its system. Any modifications to locomotives or cars must meet the applicable safety regulations. See, e.g., 49 CFR Part 231 (Railroad Safety Appliance Standards) and 49 CFR 229 (Railroad Locomotive Safety Standards). Additionally, any modification to a freight car must be reviewed and be accepted by the AAR before the car may be utilized in interchange service. As a common carrier operating under a federal permit, BNSF cannot refuse to include private cars that meet these standards.

It is important to note that locomotives and railcars that travel through the Permit Area will also be used elsewhere in the BNSF system and vice versa. Thus, any modification must be made throughout the BNSF system and must be just as suitable for use in urban areas, deserts, and the plains as they are for use in the Permit Area.

## **2.2 BNSF Covered Activities in the Permit Area**

As noted above, this HCP covers BNSF Operations in the Permit Area.

### ***2.2.1 Operations***

BNSF Operations include the safe transport of people and freight through the Permit Area. BNSF Operations also include construction, mechanical and maintenance work, as well as responding to potential hazards that may impact the safe and efficient transport of people and freight.

### ***2.2.2 Construction in the Permit Area***

BNSF contemplates that track expansion projects could be constructed in the Permit Area during the term of the Permit. This includes the design and building of new lines and any necessary structures (permanent or temporary) adjacent to the line.

While it is not possible to anticipate all future construction projects (some of which may be needed to address emergent safety concerns or new regulations), any new construction would take place adjacent to existing rail lines, within the existing right-of-way, or on neighboring lands that are leased or purchased. BNSF will submit any new construction plans for federal, state, and/or local approvals/permits as required by law.

### **2.2.3 Maintenance in the Permit Area**

Local management of train and track maintenance activities in the Permit Area is provided by supervisors in Whitefish, Essex, and Shelby, Montana. Mechanical oversight is provided by supervisors in Whitefish, Montana.

Maintenance in the right-of-way includes, but is not limited to, repairing and replacing damaged track, repairing and replacing ties, repairing and replacing roadbed, work on structures, repairing and replacing fences and gates, repairing and replacing switches, trackside warning detectors, and warning lights, repairing and replacing signage along the right-of-way, repairing and replacing warnings at at-grade crossings, maintenance on culverts, bridges, trestles, and snow sheds, maintenance of storage facilities and access roads, and vegetation control.

BNSF implements vegetation management measures to reduce vegetation growing in the railway roadbed that may attract grizzly bears or other wildlife. Herbicides used in this process are regulated by the Federal Insecticide Fungicide and Rodenticide Act (FIFRA). Persons applying these herbicides must be licensed pesticide applicators or work under the direct supervision of a licensed applicator. All herbicide labels must be complied with during application. BNSF actively manages vegetation 14 feet from the center line on either side of track. BNSF Manager of Vegetation Management is also available to evaluate and, as needed, address concerns relating to an attractant growing within the right-of-way, but outside the area of active vegetation management.

BNSF uses the same method for selecting seed mixtures that is used by MDT when revegetating right-of-way lands that have been disturbed due to construction, derailments, or other land disturbances. The process includes working with contractors and interested parties to select seed mixtures that will stabilize soils without attracting animals (grazing animals and/or predators).

### **2.2.4 Amtrak Operations**

Amtrak currently operates two passenger trains per day within the Permit Area. Amtrak's obligations under the HCP and in the Permit Area are addressed in the Implementing Agreement attached as Appendix A.

## **2.3 Alternatives to the Taking**

As described below, several alternatives to the proposed HCP were considered.

### 2.3.1 No Take Alternative

BNSF considered a “no take” alternative.<sup>9</sup> A no take alternative would avoid all take incidental to BNSF Operations in the Permit Area. The only way to avoid all take would be to cease BNSF Operations. This is not viable for several reasons. First, BNSF and its predecessors have been operating in the Permit Area for more than 120 years. This rail line is a critical piece of infrastructure that links the upper midwestern states to the ports in Seattle and surrounding areas. The railroad transports goods that are grown, mined, or manufactured in the Midwest to ports where they are shipped to customers around the world. Conversely, BNSF’s trains carry goods made elsewhere to the Midwest for the benefit of consumers and businesses in that part of the country. Shutting down BNSF Operations in the Permit Area would affect thousands of working Americans, millions of consumers in this country, and billions of dollars in trade.

Second, shifting the flow of goods to another rail line (*i.e.*, one outside the Permit Area) is not viable. Not only would it lengthen the time it takes to move materials into and out of the upper Midwest (raising prices), it would also lead to the dislocation of families and a loss of jobs as towns that existed because of their proximity to the railway lose their main employer (and then lose the businesses that worked with that employer and/or served railroad employees). There would also be environmental impacts as the volume, frequency and speed of trains traveling other routes would change to accommodate the goods that once traveled through the Permit Area.

Third, the right-of-way through the Permit Area is part of the Strategic Rail Corridor Network.<sup>10</sup> Maintaining this rail line for use in times of national emergency is a priority for the U.S. government. Maintaining the line necessarily means using the line, which creates the risk of grizzly bear mortality. Abandoning the rail line would have national security implications.

Fourth, cessation of all BNSF Operations would adversely affect intercity passenger rail service. Amtrak’s Empire Builder (#7 / #8) train is the only passenger rail service that connects the Pacific Northwest with the Midwest and through to the east coast. The Empire Builder serves passengers in eight states from Illinois to Washington and Oregon, using 46 stations, including 12 stations in Montana alone. In fiscal year 2022, Amtrak carried over 294,000 passengers. In the first quarter of fiscal year 2023, Amtrak carried over 75,000 passengers.

Finally, the ESA requires that a balance be struck between conservation goals and business objectives. The no take alternative does not balance those factors and is not required by the ESA.

### 2.3.2 Reduced Speeds Alternative

During public scoping, it was suggested that BNSF reduce the speed at which its trains run through the Permit Area. BNSF considered this alternative and concluded it was not practicable.

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<sup>9</sup> As identified in ESA Section 10(a)(2)(A), a No Take Alternative is a mandatory element of an HCP.

<sup>10</sup> *Strategic Rail Corridor Network (Stracnet) And Defense Connector Lines*, Military Surface Deployment and Distribution Command Transportation Engineering Agency (2018)  
[www.sddc.army.mil/sites/TEA/Functions/SpecialAssistant/RND%20Publications/STRACNET%202018\\_Reduced.pdf](http://www.sddc.army.mil/sites/TEA/Functions/SpecialAssistant/RND%20Publications/STRACNET%202018_Reduced.pdf)

For the reasons discussed in Section 2.1.4 above, speed limits vary throughout the Permit Area for a variety of reasons. Factors such as safety, topography, physics, weather, and maintenance all play a role in limiting speeds. Many of these factors are beyond BNSF's ability to control. And these factors change over time.

Reducing speeds would disrupt interstate commerce and may have unintended environmental consequences. The Permit Area is a small but important segment of the BNSF system. As discussed in Section 2.3.1, billions of dollars of goods flow through the Permit Area. Slowing down the speed at which those goods move will affect businesses in the U.S and abroad as well as prices that consumers pay. For the entire system to work efficiently, and meet demands of interstate commerce and foreign trade, the speeds throughout the system must be coordinated as a whole, rather than in parts. Slowing speeds in the Permit Area would create a choke point in the system that would affect transportation for thousands of miles around the Permit Area.

Trains are operated at speeds designed to maximize efficiency without jeopardizing safety. Reducing speeds will require trains to spend more time in the Permit Area, will increase fuel consumption, and will generate emissions and noise that could give rise to other environmental concerns.

The Permit Area is part of a larger transportation network. Reducing speeds in the Permit Area will have a ripple effect throughout the network. It will increase shipping times for perishable agricultural goods, it will increase traffic volume in other parts of the network, and it will increase costs for shipping that will ultimately be borne by consumers.

Finally, there is no evidence that grizzly bear mortalities in the right-of-way are related to the speed at which the train is travelling. Data from MFWP shows that grizzly mortalities have occurred randomly throughout the Permit Area. Appendix B shows locations of grizzly bear mortalities from 1975 to 2020. Some have occurred in areas where the speed limit is above 50 mph. Others have occurred in railyards where the speed limit is 10 mph.

In sum, reducing speeds - even seasonally - will have far reaching consequences. Moreover, experience in the Permit Area does not suggest that grizzly bear mortalities occur more often when trains are traveling at higher speeds.

### ***2.3.3 Scheduling Trains***

During public scoping, commenters suggested that train schedules could be modified to reduce the potential for grizzly bear train strikes. Some suggested that BNSF schedule fewer trains between dusk and dawn. Others suggested that fewer trains be scheduled during the spring and fall months when the grizzly bears are more active in and around the right-of-way.

We recognize that some studies conclude that grizzly bears move in and around the right-of-way during the night (Waller 2005). Those same studies recognize that grizzly mortalities occur at all times of day. We are not aware of a study that concludes that grizzly mortalities increase at night.

Regardless, scheduling trains to avoid the Permit Area during nighttime is impractical for many of the same reasons that reducing speed limits is not practical. Specifically, trains are scheduled around the

times when they can be safely loaded and unloaded at a port or distribution center. Scheduling is also affected by track maintenance. Non-emergency maintenance occurs during daylight hours so that maintenance crews can see what they are working on and be visible to train crews. More vehicles and pedestrians cross the right-of-way (at marked and unmarked grade crossings) during the day than at night. Increasing the number of trains during the daylight hours would also increase the possibility of collisions. As a result of the foregoing, it is not possible to reduce or eliminate the number of trains that are scheduled to run through the Permit Area at night without having a deleterious effect on interstate commerce and increasing safety concerns for those working on the railroad and the public more broadly.

Limiting the number of trains that run through the Permit Area in the spring and fall is not feasible. The volume of traffic through the Permit Area is dependent on factors outside BNSF's control. For example, traffic in the fall is related to the harvest of grain at that time of year. It is also related to the movement of goods from the ports in and around Seattle to stores in the Midwest for holiday shopping. Limiting the number of trains running through the Corridor during this period would be damaging to the economy and hurt consumers.

Scheduling trains to avoid the Permit Area during certain times or seasons will have the same ripple effect through the BNSF network as reducing speeds. It will delay the shipments and raise costs to consumers. Moreover, there is no study that concludes that grizzly bear mortalities increase at night.

### **3.0 COVERED SPECIES - THE GRIZZLY BEAR**

#### **3.1 Listing History**

The Service listed the grizzly bear as a threatened species in the contiguous United States in 1975 (40 FR 31734-31736, July 28, 1975). The Service identified the following as factors establishing the need to list: (1) present or threatened destruction, modification, or curtailment of habitat or range; (2) overutilization for commercial, sporting, scientific, or educational purposes; and (3) other manmade factors affecting its continued existence.

The Service subsequently developed the Grizzly Bear Recovery Plan (Recovery Plan) in 1982, which was revised in 1993 (USFWS 1993). The 1993 revised Recovery Plan delineated grizzly bear recovery zones in six mountainous ecosystems in the U.S. The Recovery Plan details demographic recovery criteria and strategies for the grizzly bear recovery zones in the ecosystems where grizzly bear populations persist: NCDE, Greater Yellowstone ecosystem (GYE), Cabinet-Yaak ecosystem (CYE), and Selkirk ecosystem (SE). The Recovery Plan was supplemented in 1996 and 1997 with chapters for the Bitterroot (BE) and North Cascades (NCE) recovery zones, respectively, with recovery criteria and strategies (USFWS 1996, 1997). There are currently no known populations within the BE or NCE, though grizzly bears are periodically observed in the BE. The Recovery Plan was supplemented in 2007 and 2018 with habitat-based recovery criteria for the GYE and the NCDE, respectively, and in 2017 with revised demographic recovery criteria for the GYE.

Currently, all grizzly bears in the lower-48 states are protected as threatened (USFWS 2022). The grizzly bear's threatened status may change as soon as January, 2025. Pursuant to a Court Order, the Service is required make a de-listing decision about the Yellowstone population of grizzly bears on or

before January 20, 2025. See *Wyoming v. Deb Haaland, et al.*, US District Court for the District of Wyoming, Case 2:23-cv-00092 (12/06/24). The Service has announced publicly that it will make a delisting decision about the NCDE population before the end of January 2025.

The Permit and Plan Areas lie within the NCDE. Therefore, the remainder of this discussion is focused on the grizzly bear population in the NCDE.

### **3.2 Species Description, Life History, and Population Dynamics**

Species information for the grizzly bear is presented in detail in the NCDE Conservation Strategy (NCDE Subcommittee 2020) and the Species Status Assessment (USFWS 2022); below is a summary of this information.

Grizzly bears are large and long-lived mammals. Male grizzly bears are usually larger than females (400-600 lbs. for males and 250-350 lbs. for females), and individuals in the wild typically live to be around 25 years old (LeFranc *et al.* 1987), although some wild grizzly bears have lived for over 35 years (USFWS 2022). Grizzly bears are omnivorous, opportunistic feeders that have large caloric requirements. This is particularly true in later summer and fall when bears need to build fat reserves to utilize during the denning period. Grizzly bears are generally solitary animals, except for the mating season when male and female grizzly bears tolerate one another, and a female with cubs. Grizzly bears do not defend territories, but instead have home ranges that overlap with other grizzly bears. Home range sizes for adult female grizzlies in the NCDE average 138 square miles; an adult male home range in the NCDE averages 527 square miles (USFWS 2022).

Grizzly bears in the contiguous United States spend 4 to 6 months in their dens, typically beginning in October or November (Linnell *et al.* 2000; Haroldson *et al.* 2002). During this period, they do not eat, drink, urinate, or defecate. Over the course of the denning season, grizzly bears hibernate and may lose 30 percent of body weight. This weight is stored as fat, which they must acquire during the 2 to 4 months prior to entering dens. During the pre-denning period, bears increase their food intake dramatically and may gain as much as 3.64 pounds per day (Craighead and Mitchell 1982). The availability of food resources is especially important during this period because fat stores influence reproduction and cub birth dates and growth rates (USFWS 2022).

Mating occurs from May through July, and cubs are born inside the den in late January or early February. Cubs remain with their mother for 2 to 3 years (Schwartz *et al.* 2003). The age at which females produce their first litter varies from 3 to 8 years, with litter size varying from 1 to 4 cubs. Grizzly bears have one of the lowest reproductive rates among terrestrial mammals. Grizzly bear females cease breeding successfully some time in their mid to late 20s (*ibid.*).

### **3.3 Habitat Requirements**

Grizzly bears are opportunistic omnivores and will eat berries, grasses, leaves, insects, roots, carrion, small mammals, fish, fungi, nuts, and ungulates. Grizzly bears are selective in their seasonal use of various kinds of forage and, therefore, move across the landscape as they follow the growth and abundance of preferred forage items (Mace *et al.* 1996; McLellan *et al.* 1999; Kasworm *et al.* 2010).

Grizzly bears are habitat generalists. Basic habitat requirements include the availability of food and water, security (from humans and other bears), and den sites (Mace et al. 1996; Mace et al. 1999; Linnell et al. 2000) (Table 1). Given equal foraging opportunities, under cover and in the open, bears prefer to feed under cover.

<b>Habitat Requirement</b>	<b>Key Habitats</b>
Spring foraging <sup>1</sup>	Low-elevation mesic vegetation
Summer, autumn foraging <sup>1</sup>	Moderate- to high-elevation mesic vegetation
Security cover and isolation from humans <sup>2,3</sup>	Cover provided by vegetation and topographic breaks; absence or low density of roads and trails
Denning habitat <sup>4</sup>	Remote, high-elevation areas with slopes greater than 30 degrees; friable, deep soils; and snow accumulations

<sup>1</sup> Mace et al. (1996); Mace et al. (1999); McLellan and Hovey (2001); Nielsen et al. (2002); Waller and Mace (1997).

<sup>2</sup> Archibald et al. (1987); Kasworm and Manley (1990); Mace et al. (1996); Mace et al. (1999); Mattson et al. (1987); McLellan and Shackleton (1988, 1989); Wielgus et al. (2002).

<sup>3</sup> Mace and Waller (1997); White et al. (1999); Graves et al. (2003).

<sup>4</sup> Pearson (1975); Servheen (1981); Zager and Jonkel (1983); Podruzny et al. (2002).

In the NCDE, grizzly bears eat roots/corms/bulbs and other vegetation in the early summer months before berries become available (Aune and Kasworm 1989; McLellan and Hovey 1995). Grizzly bears on the eastern front of the Northern Rockies and in Glacier National Park also feed on concentrations of lady bird beetles and army cutworm moths (Mattson et al. 1991). Once berries become available, NCDE grizzly bears consume a wide variety of available species. McLellan and Hovey (1995) analyzed scat samples and determined that the amount and species of berries varies annually based on their availability. During late summer to fall, grizzly bears in the NCDE continue to eat berries but also consume more meat and roots/bulbs/corms (Aune and Kasworm 1989; McLellan and Hovey 1995).

In addition to foraging habitat, a degree of isolation from humans and human-associated activities and hiding cover are necessary habitat components for grizzly bears (Mattson et al. 1987; McLellan and Shackleton 1988, 1989; Mace et al. 1996, 1999). Human activities can result in direct mortality of bears, as well as indirect negative effects by displacing bears to less suitable habitats (McLellan et al. 1999; Wakkinen and Kasworm 2004). The most effective way to minimize the risk of adverse interactions between humans and bears is to provide spatial separation between areas of human activity and areas of bear activity. Managing public motorized access to grizzly bear habitat is one of the most common and effective ways to maintain a level of separation between grizzly bears and humans. In areas where such separation is not possible, providing large areas of secure habitat that include seasonal habitats may reduce the potential for contact and minimize risk of disturbance and illegal mortality (Mace and Waller 1998).

Security cover allows grizzly bears to avoid contact with humans. It also allows bears to avoid contact with other bears. Strict territoriality among grizzly bears is not known, and intraspecific defense behavior generally tends to be limited to defense of limited food concentrations, defense of young, and surprise encounters (USFWS 1993). Adult male bears are known to occasionally kill juveniles, and adults also occasionally kill other adults. Females with cubs require spatial separation from aggressive

males. This is particularly true in spring when cubs are most prone to attack. Data are insufficient to fully assess the effects of predation on younger bears by adult bears (USFWS 1993), particularly when considering potential indirect effects of various human activities that may displace a subadult bear into the home range of an aggressive adult bear. Females with cubs often select rugged and isolated habitats for this reason (Mace and Waller 1997; Russell et al. 1979). Shrub and tree cover, as well as topographic landscape features, are commonly used as security from humans or other bears (McLellan and Hovey 2001; Wielgus et al. 2002), and dispersing subadult bears may be forced to choose poor home ranges that may be equally dangerous to their survival (USFWS 1993).

Another key habitat requirement for grizzly bears is the presence of suitable denning habitat. Den site characteristics are variable, but several researchers have described dens located at high elevations in remote areas with slopes greater than 30 degrees, soils that are deep, and aspects where snow accumulates (Craighead and Craighead 1972; Linnel et al. 2000; Mace and Waller 1997; Podruzny et al. 2002). Sloped sites are often selected because they facilitate easier digging and are generally stabilized by trees, boulders, or root systems of herbaceous vegetation. In addition to excavating dens, grizzly bears den in natural caves and hollows under the roots of trees. While individual den sites are rarely reported to be used for more than one winter, numerous researchers have observed that dens rarely occur singly, but are concentrated in areas that apparently possess appropriate environmental conditions (Craighead and Craighead 1972).

### **3.4 Status of Grizzly Bears in the NCDE**

#### **3.4.1 Federal Status**

The NCDE grizzly bear population has achieved biological recovery objectives (Kendall et al. 2009, Mace et al. 2012, USFWS 2018). The NCDE grizzly bear population has grown and expanded its range since 1993 (USFWS 2022). A DNA study estimated the 2004 population in the NCDE at 765 grizzly bears; more than double previous estimates (Kendall et al. 2009). Montana Fish, Wildlife and Parks research conducted between 2004 and 2011 showed that the NCDE grizzly bear population was growing. (Mace and Roberts 2012). Costello et al. (2016) calculated a growth rate of 2.3 percent for grizzly bears in the NCDE. Applying a calculated population growth of 2.3 percent since 2004, the 2022 population estimate was 1,138 and the 2023 population estimate is 1,163 individuals (Costello and Roberts 2022).

In 2013, the Service announced the availability of the draft NCDE Grizzly Bear Conservation Strategy for public review and comment (USFWS 2013). Five federal agencies (the Service, USFS, NPS, U.S. Bureau of Land Management, and U.S. Geological Survey), two Montana State agencies (MFWP and DNRC), and two tribal entities (the Blackfoot Nation and the Confederated Salish and Kootenai Tribes) participated in development of the NCDE Conservation Strategy. Its purpose is to provide management guidelines for federal, tribal and state managers to maintain a recovered, genetically diverse population in the NCDE post-delisting. In 2017, the NCDE Subcommittee re-assembled the Grizzly Bear Conservation Strategy team to respond to the public comments and to update and revise the NCDE Conservation Strategy in response to those comments and new information, as appropriate. Although some editing occurred to reduce redundancy and improve clarity, the Grizzly Bear Conservation Strategy team maintained as much of the 2013 NCDE Conservation Strategy as possible.



The final NCDE Conservation Strategy plan was published in 2019 but continues to be updated, as appropriate (NCDE Subcommittee 2020). Its goal is to maintain a recovered, genetically diverse grizzly bear population throughout the Demographic Monitoring Area (DMA: the Primary Conservation Area [PCA] and Zone 1), while maintaining demographic and genetic connections with Canadian populations and providing the opportunity for connectivity with other ecosystems (CYE, BE, GYE).

The NCDE Conservation Strategy applies differential protections in areas depending on their relative importance to grizzly bears (NCDE Subcommittee 2020). The following management zones and areas are designated:

- Primary Conservation Area (PCA): The PCA is the same area as the NCDE Recovery Zone and is managed as a source area where the objective is continual occupancy by grizzly bears. Habitat conditions in the PCA are maintained in a manner that is compatible with a stable to increasing grizzly bear population.
- Management Zone 1 (zone 1): The objective in zone 1 is continual occupancy by grizzly bears but at lower densities than inside the PCA. Protections in zone 1 focus on managing motorized routes and implementing food/attractant storage orders.
- Demographic Connectivity Areas (DCA): Within zone 1, there are two DCAs: Salish and Ninemile. These areas were established to allow the NCDE to serve as a “source” population to other ecosystems (i.e., CYE and BE). Protections in the DCAs support female occupancy and dispersal by limiting miles of open roads, managing current roadless areas, and implementing food/attractant storage orders.
- Management Zone 2 (zone 2): National Forest System (NFS) lands in zone 2 are managed to provide the opportunity for grizzly bear dispersal, particularly males, to other ecosystems. The protections in zone 2 center on conflict prevention and response. As with the PCA, zone 1 and the DCAs, a food/attractant storage order is implemented on NFS lands within zone 2.
- Management Zone 3 (zone 3): Zone 3 does not provide habitat linking to other grizzly bear ecosystems. Management in zone 3 focuses on conflict response.

In addition, on July 7, 2016 and January 3, 2018, the Service conducted public workshops to develop and refine habitat-based recovery criteria for the NCDE grizzly bear population. After consideration of public comments, on May 16, 2018, the Service published habitat-based recovery criteria for the NCDE population, as a supplement to the 1993 Recovery Plan (USFWS 2018).

The NCDE population has recovered to the point that the population can sustain limited management removal of select bears to augment the Cabinet-Yaak grizzly bear population. From 2005 through 2018, MFWP, in cooperation with the Service, removed approximately 16 grizzly bears from the NCDE and relocated them to the Cabinet-Yaak Grizzly Bear Recovery Zone (Kasworm et al. 2019).

As noted above, the USFWS has announced that it will make a decision about de-listing the NCDE population of grizzly bears on or before January 31, 2025.

### ***3.4.2 State of Montana Policy on Grizzly Bears***

The State of Montana, through MFWP, is largely responsible for managing the grizzly bear population in the NCDE. The State's position on the status of the grizzly bear and the management of the grizzly bear population should, therefore, be considered.

In 2011, during the 62<sup>nd</sup> session of the Montana Legislature, Montana revised the state's grizzly bear management policy. The policy (87-5-301 M.C.A.) states the following.

(1) The legislature finds that:

- (a) grizzly bears are a recovered population and thrive under responsive cooperative management;
- (b) grizzly bear conservation is best served under state management and the local, state, tribal, and federal partnerships that fostered recovery; and,
- (c) successful conflict mitigation is key to maintaining public support for conservation of the grizzly bear.

(2) It is the policy of the state to:

- (a) manage the grizzly bear to avoid conflicts with humans and livestock; and
- (b) use proactive management to control grizzly bear distribution and prevent conflicts, including trapping and lethal measures.

On December 21, 2018, the Montana Fish and Wildlife Commission adopted Montana Administrative Rule 12.9.1403 Grizzly Bear Demographic Objectives for the Northern Continental Divide Ecosystem, which codifies the population objectives detailed in the NCDE Conservation Strategy for grizzly bears. The Rule directs the State to enter a memorandum of understanding (MOU) and to manage the NCDE population of grizzly bears consistent with the NCDE Conservation Strategy (NCDE Subcommittee 2019), upon delisting from the ESA.

MFWP has completed a grizzly bear management plan for western Montana and southwestern Montana (Dood et al. 2006, MFWP 2013). These plans establish goals and strategies to manage and enhance grizzly bear populations and to minimize the potential for grizzly bear-human conflicts. A long-term goal is to allow the populations in western and southwestern Montana to reconnect through the intervening, currently unoccupied habitats. MFWP is also very active in providing public information and education about conserving grizzly bears and their habitat. This includes bear management specialists who provide information and assistance to landowners on appropriate ways to secure food and bear attractants and respond to reports of conflicts with bears. These specialist positions have a proven track record of resulting in a reduction of human-caused grizzly bear mortalities.

On September 30, 2024, MFWP released its final Statewide Grizzly Bear Management Plan. See <https://fwp.mt.gov/conservation/wildlife-management/grizzly-bears> .

### **3.5 Factors Affecting the Status of NCDE Grizzly Bears**

The primary factors affecting the status of the NCDE population of grizzly bears are access management, human-grizzly bear conflicts, and connectivity. These factors are all addressed in the NCDE Conservation Strategy management zones as described above (NCDE Subcommittee 2020). The signatories to the NCDE Conservation Strategy are those agencies with both the largest land holdings in grizzly bear habitat and the authority to manage for grizzly bear recovery and will manage for these factors on their lands. The potential for climate change to affect grizzly bears is also discussed.

#### **3.5.1 Access Management**

A primary factor affecting grizzly bears are human activities that reduce the quality and quantity of habitats (USFWS 2022, p. 7). Secure habitat is important to the survival and reproductive success of grizzly bears, especially adult females (Mattson et al. 1987, IGBC 1994). Grizzly bear habitat security is primarily achieved by managing motorized land management and public access within forested habitats, which results in four favorable outcomes for grizzly bears:

- 1) minimizes human interaction and reduces potential grizzly bear mortality risk;
- 2) minimizes displacement from important habitats;
- 3) minimizes habituation to humans; and
- 4) provides habitat where energetic requirements can be met with limited disturbance from humans.

All National Forests in the NCDE prescribe access management in the individual Forest Plans and the *Amendments to Incorporate Habitat Management Direction for the Northern Continental Divide Ecosystem Grizzly Bear Population* (USDA Forest Service 2018a, b). Motorized access standards on National Forests have effectively sustained habitat quality and quantities, specifically in the GYE and NCDE where grizzly bear populations are increasing (USFWS 2022, p. 7). These provisions for secure habitat and access management in grizzly bear habitat are sustained for the PCA, zone 1, and zone 2 under the NCDE Conservation Strategy. Because Montana DNRC manages forested grizzly bear habitats, it implements a conservation strategy for access management in grizzly bear habitat under its HCP (DNRC 2010, 2018). Access management is not prescribed for any other landowners in the NCDE.

#### **3.5.2 Human-Caused Mortality**

Human-caused mortality is the second primary factor affecting grizzly bears at the individual and ecosystem level (USFWS 2022, p. 7). Management removal (*i.e.*, human-conflict related) and unauthorized take (*i.e.*, defense of property, mistaken identification, malicious killing/poaching) are the leading causes of grizzly bear mortality in the NCDE (Table 2). Management removals and unauthorized take (illegal mortalities) represent the majority (27.38 and 23.9 percent, respectively) of all

human-caused grizzly bear mortality from 1975 to 2022 (Table 2). After hunting (13 percent), which ended in 1991, defense of life and vehicle strikes (both at nearly 10 percent each) are the next most likely human-caused mortality (Table 2).

Table 2. Human-Caused Grizzly Bear Mortality in and around the NCDE since 1975. (*Orphaned cubs were assigned the same cause of mortality as the female*).

Year	Management	Augmentation	Hunting	Self-Defense <sup>a</sup>	Illegal <sup>b</sup>	Train	Vehicle	Accident	Unknown	TOTAL
1975	0	0	15	0	6	1	0	0	0	22
1976	3	0	11	1	4	2	0	1	1	23
1977	7	0	5	0	4	0	0	1	0	17
1978	1	0	7	0	4	0	0	1	0	13
1979	1	0	11	0	6	0	0	1	1	20
1980	10	0	11	1	4	0	0	0	0	26
1981	4	0	11	0	4	0	0	0	0	19
1982	0	0	17	0	7	0	0	0	0	24
1983	2	0	8	1	5	0	1	0	0	17
1984	1	0	12	2	5	1		1	0	22
1985	1	0	6	2	3	1	1	2	0	16
1986	1	0	5	0	5	1	0	3	0	15
1987	5	0	3	0	2	0	0	2	0	12
1988	1	0	4	0	3	0	0	1	0	9
1989	0	0	0	4	6	2	0	0	0	12
1990	4	0	1	1	3	5	0	2	0	16
1991	2	0	3	0	1	0	0	0	0	6
1992	10	0	NA	1	1	1	1	1	0	15
1993	3	0	NA	1	1	0	0	0	0	5
1994	0	0	NA	1	5	0	0	0	0	6
1995	2	0	NA	0	10	2	0	0	0	14
1996	1	0	NA	1	7	2	0	1	0	12
1997	4	0	NA	2	1	3	0	1	2	13
1998	8	0	NA	2	7	1	1	1	0	20
1999	4	0	NA	1	5	5	0	2	1	18
2000	7	0	NA	3	9	0	1	0	0	20
2001	9	0	NA	2	4	4	1	1	0	21
2002	5	0	NA	3	2	1	4	0	0	15
2003	5	0	NA	1	4	3	1	0	0	14
2004	11	0	NA	1	6	4	3	0	1	26
2005	4	1	NA	2	7	0	0	4	0	18
2006	2	1	NA	0	4	3	0	3	0	13
2007	2	0	NA	4	4	5	7	0	0	22
2008	2	2	NA	1	4	3	1	1	0	14
2009	3	0	NA	6	6	2	0	1	1	19

2010	11	0	NA	0	3	0	5	0	0	19
2011	12	2	NA	8	5	3	1	2	0	33
2012	4	1	NA	4	7	0	3	0	0	19
2013	9	1	NA	3	9	2	3	1	0	28
2014	1	2	NA	5	8	1	2	1	0	20
2015	5	1	NA	1	5	0	6	1	1	20
2016	6	1	NA	1	4	0	3	2	0	17
2017	7	0	NA	8	6	1	3	2	1	28
2018	7	1	NA	6	8	2	14	4	0	42
2019	21	1	NA	2	2	8	7	2	1	44
2020	11	0	NA	9	5	0	4	1	5	35
2021	19	0	NA	3	7	0	15	5	1	50
2022	29	0	NA	1	1	3	9	1	2	46
2023	<b>12</b>	<b>0</b>	<b>NA</b>	<b>7</b>	<b>7</b>	<b>3</b>	<b>8</b>	<b>2</b>	<b>7</b>	<b>46</b>
	<b>279</b>	<b>14</b>	<b>130</b>	<b>102</b>	<b>236</b>	<b>75</b>	<b>105</b>	<b>55</b>	<b>25</b>	<b>1,021</b>
	27.33%	1.37%	12.73%	9.99%	23.11%	7.35%	10.28%	5.39%	2.45%	

1. "Management" mortalities include: human-bear conflicts involving food/property/habitation, human aggression/injury/fatality, livestock depredation.
2. "Illegal" mortalities include: mistaken identities (i.e., grizzly bears killed by black bear hunters), defense of property, and malicious/poaching.
3. "Other accidental" mortalities include: capture related mortalities, poisoning, and drowning, and bears euthanized due to injury/disease.

Cities and towns are common in low elevations and major valley bottoms within and adjacent to the NCDE DMA. Human-generated food sources such as bird feeders, pet and livestock foods, human foods, gardens, chicken coops, beehives, orchards, and developed sites such as restaurants, garbage facilities, camp sites, and farms present attractants for grizzly bears. Grizzly bears attracted to these human-generated food sources may become food conditioned. These individuals often become a threat to human safety and property and are removed through agency-grizzly bear control actions (management removals).

Because of its primary role in human-caused mortality of grizzly bears, management of attractants is dictated in all management zones of the NCDE conservation strategy. Attractant storage requirements for contractors or permitted activities occur on 91 percent of lands inside the NCDE PCA (NCDE Subcommittee 2020). A food storage order is in effect on all NFS lands and in Glacier National Park and livestock allotments on NFS lands are carefully managed. These agencies have been successful in managing attractants on federal lands under the current NCDE food storage order. The Montana DNRC implements a food storage order and conflict management conservation strategy for its staff and contractors working in grizzly bear habitat under its HCP. BNSF has managed attractants in the railroad right-of-way since 1991 and will continue those efforts through this HCP.

In addition, the MFWP grizzly bear management program educates the public and addresses attractants, food conditioning, and food habituation to reduce risks of human-grizzly bear conflicts on private and

public lands. In cooperation with other agencies, this program has made notable strides toward creating an informed public and reducing the availability of attractants to grizzly bears on private and public lands. For example, to reduce mortality associated with mistaken identity of grizzly bears, MFWP implemented mandatory black bear and grizzly bear identification training for all black bear hunters.

The Service recently concluded that the level of mortality as a proportion of the estimated population size (*i.e.*, mortality rate) has remained relatively constant and that human-caused mortality rates have been low enough to allow the NCDE population to increase in number and range (USFWS 2022, p. 146-147). As the grizzly bear population continues to increase and expand its range, it is likely that human-grizzly bear conflicts and associated mortality will continue to be an important factor in grizzly bear management. To that end, the BNSF Grizzly Bear HCP mitigation program provides funding to address ongoing human-caused mortality issues in the NCDE to offset the effects of incidental take from railway operations.

### ***3.5.3 Habitat Fragmentation***

Large expanses of unfragmented habitat are important for grizzly bear feeding, breeding, sheltering, traveling, and other essential behaviors. Historically, as human settlements and developments in valley bottoms and along roads increased in grizzly bear habitat, grizzly bear populations have become more fragmented or suffer greater risk of mortality when attempting to navigate these areas.

Linkage zones, or zones of habitat connectivity within or between populations of animals, foster the genetic and demographic health of the species by providing secure habitat through which animals may travel (Servheen and Sandstrom 1993); many efforts to identify and conserve linkage areas for a wide range of species are underway. The NCDE encompasses multiple National Forests, Glacier National Park, and is contiguous with grizzly bear habitat in Canada, including Banff National Park (see [Figure 2](#)). Therefore, the NCDE provides large blocks of continuous wilderness or secure habitat, providing high levels of connectivity (USFWS 2022). However, high volume transportation corridors, low vegetative cover, presence of human settlements, and other associated human activity in valley bottoms do represent risks for grizzly bears attempting to move through these areas. While these areas present a high risk of human-grizzly bear conflict for some individual grizzly bears, grizzly bears are moving through these areas to habitats beyond the NCDE PCA.

Under the NCDE Conservation Strategy, connectivity is addressed in the PCA and management zones 1 and 2. In these areas, road densities, human activities, and attractants are managed to reduce their potential effects on grizzly bear movement and dispersal.

### ***3.5.4 Climate Change***

Many factors affect biodiversity including climatic conditions; influences of competitors, predators, parasites, and diseases; disturbances such as fire; and other physical factors. Climate trends will be important to NCDE grizzly bears with respect to how these trends affect denning behavior, foraging habitat availability, and fire-regimes. Earlier snowpack melt-off may shorten the denning season and make food available later in the fall and earlier in the spring. Spring and fall encounters between grizzly bears and people may therefore increase, escalating the mortality risk to bears during these times. An additional effect of climate change could be changes in the availability of and distribution of foraging

areas due to increasing temperatures and seasonal changes in precipitation. The extent and rate at which plant species and communities would be affected is difficult to predict. Changes in vegetative distributions may also influence other mammal distributions, including prey species like ungulates.

Over the last 50 years, the grizzly population in the NCDE has grown and is continuing to grow. Grizzly bears are habitat generalists and opportunistic omnivores, able to find resources in a wide variety of habitat conditions. Many scientists believe that due to these characteristics, climate change will not threaten grizzly bear populations due to ecological threats or constraints (Servheen and Cross 2010). Scientists are concerned that seeking alternative food sources could drive grizzly bears into lower elevations where the risk of human interactions is greater. This coupled with a shorter denning period in response to increased temperatures and availability of food could further increase the risk of human-grizzly bear conflicts and associated mortality (Servheen and Cross 2010). It is difficult to predict how this large, wide-ranging species will respond to future environmental changes associated with climate change. The scope and scale of such changes are unknown, and the effects (positive or negative) on grizzly bears would likely be variable across the landscape.

### ***3.5.5 Grizzly Bear Occurrence in the Permit Area***

The Permit Area runs east-west through three of the NCDE conservation strategy management zones (see Figure 1). Between Conkelly and East Glacier Park, the Permit Area runs through the PCA, or the Recovery Zone, which represents core grizzly bear habitat containing the highest density of grizzly bears. The PCA/Recovery Zone is managed as the population source and is considered continually occupied by grizzly bears.

The Permit Area runs through zone 1 on the west and east sides of the PCA. Zone 1 has lower grizzly bear density but is also considered continuously occupied. The management goal of zone 1, along with the PCA, is to maintain a diverse grizzly bear population while maintaining demographic and genetic connections with Canadian populations and other ecosystems (CYE, BE, GYE) (NCDE Subcommittee 2020). The most western portion of the Permit Area borders the Salish DCA in zone 1, which is specifically managed to support female occupancy for eventual dispersal to the CYE and BE (NCDE Subcommittee 2020).

The east portion of the Permit Area is in zone 3, between Browning and Shelby, Montana. Grizzly bear occupancy in zone 3 is spotty and there are no habitat linkages to other grizzly bear ecosystems. According to the NCDE Subcommittee, zone 3 "...does not provide habitat linking to other grizzly bear ecosystems. Grizzly bears currently occupy Zone 3 (adjacent to Zone 1), and their numbers are expected to increase, but this may be incompatible with human presence because these areas often lack forest cover, land ownership is mostly private, and agricultural uses predominate. In Zone 3, grizzly bear occupancy will not be actively discouraged and will be managed primarily through conflict response." (NCDE Subcommittee 2020, p.15).



## **4.0 POTENTIAL BIOLOGICAL IMPACTS AND TAKE ASSESSMENT**

BNSF (or its predecessors) has operated in the Permit Area since the last half of the 19<sup>th</sup> century. For much of its length the Permit Area traverses habitat with the highest density grizzly bears in the NCDE. The potential biological impacts of BNSF Operations in the Permit Area include disturbance and displacement of grizzly bears; impediment to some individual grizzly bear movements and dispersal; and direct mortality from train strikes. Other than direct mortality from train strikes, none of the biological impacts of the railway on bears results in adverse effects culminating in incidental take of grizzly bears. The biological impacts of the railway and the assessment of take under this HCP is discussed below.

### **4.1 Effects of BNSF Operations That Do Not Rise to the Level of Incidental Take**

During development of the HCP, BNSF and the Service considered whether BNSF Operations in the Permit Area may cause the disturbance and/or displacement of grizzly bears or may act as an impediment to their movements and dispersal.

#### ***4.1.1 Disturbance and Displacement***

Individual bear reactions to the long-term operations of trains in the Permit Area are variable. Some bears are likely permanently displaced from surrounding habitat and others successfully incorporate the Permit Area within their home ranges. Grizzly bears are living in and around the right-of-way and females are raising young in this area; observations are documented each year (USFWS 2017). Waller (2005) observed that at least some resident bears become habituated to noise and other activity associated with the railroad. This is supported by the occupation of all grizzly bear subunits overlapping the Permit Area (USFWS 2017). Short-term maintenance actions (such as vegetation trimming, fencing repair or installation, tie repair or replacement, or signal repair) may result in temporary disturbance of grizzly bears whose home ranges include the railway right-of-way. Grizzly bear responses may range from a simple awareness of the workers in the right-of-way (*i.e.*, raising the head but otherwise continuing uninhibited) to short-term disturbance or flight response (resulting in physiological changes such as increased stress and energetic demands) to temporary displacement from an area.

The effects of disturbance and displacement from operation of the railroad on grizzly bears are expected to be minor because (1) the railway has been in continuous use since 1893 and grizzly bears with home ranges that overlap the railway are likely adapted to its presence and the activities that occur therein; and (2) construction and maintenance activities creating a disturbance occur within small geographic areas such that a grizzly bear may temporarily avoid the area and still access adequate foraging opportunities in other portions of its home range.

#### ***4.1.2 Habitat Fragmentation, Population Connectivity, and Grizzly Bear Movement***

Habitat fragmentation can cause loss of population connectivity which may increase vulnerability to threats, such as decreased demographic (female dispersal) or genetic connectivity (male dispersal). Demographic connectivity is important because females have the potential to support small population augmentation and/or demographic rescue through their ability to bear offspring post-immigration into small, isolated populations (Proctor *et al.* 2005, 2012 as cited in USFWS 2022). Long distance dispersal by males enables

immigrants to act as a counter to genetic fragmentation and loss of nuclear genetic diversity (e.g., GYE) (Proctor *et al.* 2012, p. 27; Peck *et al.* 2017, p. 15 as cited in USFWS 2022).

USFWS considers the NCDE grizzly bear population genetically diverse, large enough to ensure genetic health, and genetically and demographically well-connected to Canadian populations (USFWS 2022, p. 174). It has been suggested that human-caused fragmentation within the NCDE was present on the western side of the Corridor attributed to higher mortality rates from vehicle and train collisions (when compared to other areas of the ecosystem) (Kendall *et al.* 2009 as cited in USFWS 2021). Frequent male and female movements have been documented across the corridor, including the BNSF right-of-way (Waller and Servheen 2005, as cited in USFWS 2022). Therefore, BNSF concludes that its operations are not adversely affecting the genetic health or demographic connectivity of the NCDE.

Ongoing genetic sampling and radio telemetry enables scientists to examine movements, genetic diversity, and population structure within the NCDE grizzly bear population (in their entirety: Kendall *et al.* 2008; Kendall *et al.* 2009; Mace *et al.* 2012; Proctor *et al.* 2012; Mickle *et al.* 2016a; Morehouse *et al.* 2016 as cited in USFWS 2022). Grizzly bear managers and the technical committee will remain vigilant about the possible fragmenting effects of the U.S. Highway 2 / BNSF right-of-way corridor.

## **4.2 Biological Impacts of Railway Operations That Cause Incidental Take**

The primary cause of incidental take due to BNSF Operations in the Permit Area is bear strikes. Factors that affect the potential for grizzly bear take incidental to BNSF Operations include bear population density in the Permit Area, presence of bear attractants in the right-of-way, and human-made and natural features that inhibit the ability of bears to escape on-coming trains. Even if all controllable factors are addressed, there is still the possibility of a grizzly bear being struck in the right-of-way.

### ***4.2.1 Attractants in the Corridor That May Lead to Mortality***

Factors that attract bears to the right-of-way include grain spills resulting from derailments, grain spills resulting from leaking cars, livestock and wildlife carrion on or immediately adjacent to the railway roadbed, disposal of garbage and human waste, and the presence of succulent vegetation or fruiting shrubs growing on or near the railway roadbed.

#### **Major Grain Spills from Derailments**

In the past, train derailments in the HCP Corridor that have resulted in grain spills onto or adjacent to the railway have attracted grizzly bears. A few grizzly bears became food-conditioned to the grain and several were killed by trains near grain spills.

#### **Minor Grain Spills**

Minor grain spills in the HCP Corridor occur when grain cars “leak” as they travel along the track. Accumulations of grain can occur when a train with a leaking car is stopped for a long period on a siding. Grizzly bears may look for spilled grain in the railroad right-of-way. Additionally, as with larger grain spills, other wildlife may be attracted to the grain along the right-of-way. Wildlife killed by trains may further attract grizzly bears to the right-of-way to feed on the carrion.

## Livestock and Wildlife Carrion in the Right-of-Way

Cattle and other livestock have been hit and killed by trains near Nyack Flats (RR Milepost 1185 to 1188) and on the Blackfeet Nation. Additionally, wildlife (e.g., moose, elk, and deer) have been hit and killed by trains in the HCP Corridor. This carrion may attract grizzly bears to the right-of-way. Trains may collide with wildlife at any time, but such incidents tend to be most prevalent during the winter months when wildlife move along the plowed railbed. Carrion that accumulates during the winter can be an attractive food source for grizzly bears feeding in the spring.

## Refuse Disposal

Grizzly bears may be attracted to the tracks by refuse dumped in the right-of-way. In the past, refuse from passenger trains has been reported in the right-of-way in the HCP Corridor, creating a potential bear attractant. BNSF crews and contractors work on a variety of projects to maintain the right-of-way in the Permit Area and may be a potential source of refuse that could attract grizzly bears.

## Succulent Vegetation

Succulent vegetation or fruiting shrubs within or near the railbed are a potential food source for grizzly bears, especially during the spring. Additionally, other wildlife may be attracted by vegetation occurring in or near the railbed, resulting in carrion that may further attract grizzly bears to the tracks.

### ***4.2.2 Physically Constrained Areas that Create a Risk of Strikes***

On constrained portions of the right-of-way, grizzly bears may attempt to avoid oncoming trains by running down the track rather than running off to one side. This typically happens in places where the track is elevated relative to the adjacent landscape or in steep cuts.<sup>11</sup> As a result, grizzly bears may become trapped in the presence of an oncoming train and be struck and killed.

## **4.3 Type and Amount of Incidental Take from BNSF Operations**

Appendix B shows locations of grizzly bear mortalities from 1975 to 2020. As described in Section 1.1, since the 1990s, BNSF, in cooperation with GNESEA and the Service, has voluntarily implemented numerous avoidance and minimization measures within the HCP Corridor to eliminate attractants and has tested methods to deter bears from areas where they may be trapped by oncoming trains. No grain was noted at the sites of any grizzly bears strikes in the last 20 years. There have been 3 significant grain spills in the Permit area in the last 20 years; in 2004, 2005 and 2024. Deployment of the rapid response protocol at those grain spills resulted in no grizzly bear mortalities at those sites. The CritterGitters™ at the entrances to trestles with a history of strikes were removed in approximately 2015. Since that time only one grizzly bear strike has occurred near a trestle.<sup>12</sup> While the available data suggests that the measures are working, grizzly bears continue to be struck by trains. With few exceptions, the current level of take due to train collisions is unavoidable.

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<sup>11</sup> Steps have been taken to reduce these mortalities and there have been no bears struck on trestles or in steep cuts in some time.

<sup>12</sup> That strike occurred in September 2023 near, but not on, the trestle in Coram. That is the first strike near the Coram trestle since 1999.

Incidental take levels can be expressed in an HCP and associated Permit in one of two ways: (1) in terms of the number of animals to be "killed, harmed, or harassed" if those numbers are known or can be determined; or (2) incidental take can be expressed by using a surrogate(s) such as habitat acres or other appropriate habitat units to be affected generally or because of a specified activity. In this case, incidental take occurs as discrete events in the Permit Area and is well documented when it does occur. Therefore, BNSF has elected to express incidental take in terms of the numbers of grizzly bears to be killed during the term of the HCP.

#### **4.3.1 Critical Assumptions in the Take Analysis**

BNSF consulted with the Service and the HCP technical committee to conduct the analysis of anticipated incidental take of grizzly bears for the Permit term. The analysis is based on the following important assumptions:

1. Those portions of the HCP Plan Area that have *not* been seriously affected by human development are among the most productive habitats within the NCDE.
2. Measures in the HCP that have already been implemented through GNESEA, have avoided and minimized grizzly bear take incidental to BNSF Operations.
3. Railroad traffic through the Permit Area will continue and is assumed to increase over time; however, traffic may vary seasonally and is dependent on market conditions. Assuming all avoidance and minimization measures are implemented properly, factors outside the control of BNSF influence the potential for grizzly bear take incidental to BNSF Operations.
4. Grizzly bear take incidental to BNSF Operations in the Permit Area will continue to occur. It is not possible to predict with certainty the frequency of future take. Absent a better indicator, this analysis is based on historic data on take attributed to train strikes in the Permit Area.
5. The adaptive management framework provides a mechanism for addressing new data and/or technologies as they arise.
6. The grizzly bear population in the NCDE is stable or increasing.

#### **4.3.2 Methods Used to Assess Incidental Take**

The Service and the HCP technical committee recommended that the analysis of incidental take should follow the Grizzly Bear Recovery Plan model for developing recovery objectives for the NCDE grizzly bear population. Thus, the assessment of incidental take:

- is based on an analysis of rolling six-year averages, which is useful in time-series data to smooth out "noise" (*i.e.*, randomness or short-term fluctuations) to focus on longer-term trends;
- evaluates grizzly bear take incidental to BNSF Operations as a percentage of all human-caused grizzly bear mortality in the NCDE; and
- includes a secondary assessment of female grizzly bear take incidental to BNSF Operations as a percentage of all human-caused female grizzly bear mortality.

For purposes of this HCP, the historic data used to arrive at the incidental take limits extends from 1992 to the current year for which data is available (2023). The year 1992 was selected because (1) it is the first year in which legal hunting was no longer a source of human-caused bear mortality; (2) grizzly bear

mortality data became more reliable; and (3) BNSF had initiated its voluntary avoidance and minimization measures in the HCP Corridor the previous year.

### 4.3.3 Analysis of Incidental Take in the Permit Area

A six-year rolling average is calculated by totaling the data of the specified year, plus the previous five years, and dividing by six. For example, the six-year rolling average of grizzly bear mortality for 1997 is determined by totaling mortalities from 1997, 1996, 1995, 1994, 1993, and 1992, and dividing by six. The resulting calculation is average annual mortality for the specified 6-year period. For example, the average annual mortality of grizzly bears from all human causes for the 6-year rolling period from 1992 to 1997 was 10.8 individuals per year. The six-year rolling average human- and train-caused mortality from 1992 to 2022 in and near the NCDE is summarized in Table 3.

**Table 3. Six-year rolling averages of human-caused grizzly bear mortalities in and around the NCDE from 1992 to 2022.**

6-Year Rolling Average Period	Average Annual Human-Caused Mortality per Rolling Period	Average Annual Train-Caused Mortality per Rolling Period	Avg. Annual Train-caused Mortality as a % of Human-Caused Mortality per Rolling Period	Average Annual Human-Caused Female Mortality per Rolling Period	Average Annual Train-Caused Female Mortality per Rolling Period	Avg. Annual Train-caused Female Mortality as a % of Human-Caused Mortality per Rolling Period
1992 – 97	10.83	1.33	12.31%	5.00	0.50	10.00%
1993 – 98	11.67	1.33	11.43%	4.67	0.67	14.29%
1994 – 99	13.83	2.17	15.66%	5.17	0.83	16.13%
1995 – 00	16.17	2.17	13.40%	6.50	0.83	12.82%
1996 – 01	17.33	2.50	14.42%	6.67	1.17	17.50%
1997 – 02	17.83	2.33	13.08%	6.83	1.17	17.07%
1998 – 03	18.00	2.33	12.96%	7.00	1.17	16.67%
1999 – 04	19.00	2.83	14.91%	8.33	1.33	16.00%
2000 – 05	19.00	2.00	10.53%	8.83	1.17	13.21%
2001 – 06	17.83	2.50	14.02%	7.50	1.33	17.78%
2002 – 07	18.00	2.67	14.81%	7.50	1.00	13.33%
2003 – 08	17.83	3.00	16.82%	8.00	1.33	16.67%
2004 – 09	18.67	2.83	15.18%	8.33	1.00	12.00%
2005 – 10	17.50	2.17	12.38%	6.50	0.67	10.26%
2006 – 11	20.00	2.67	13.33%	7.50	0.67	8.89%
2007 – 12	21.00	2.17	10.32%	8.00	0.50	6.25%
2008 – 13	22.00	1.67	7.58%	9.17	0.67	7.27%
2009 – 14	23.00	1.33	5.80%	10.17	0.50	4.92%
2010 – 15	23.17	1.00	4.32%	10.17	0.50	4.92%

2011 – 16	22.83	1.00	4.38%	11.17	0.50	4.48%
2012 – 17	22.00	0.67	3.03%	10.00	0.67	6.67%
2013 – 18	25.83	1.00	3.87%	11.50	0.67	5.80%
2014 – 19	28.50	2.00	7.02%	12.00	1.00	8.33%
2015 – 20	31.00	1.83	5.91%	12.67	0.83	6.58%
2016 – 21	36.00	1.83	5.09%	13.83	0.83	6.02%
2017 – 22	40.83	2.33	5.71%	15.33	1.00	6.52%
Average Of All Intervals	21.14%	1.99	10.32%	8.78%	0.87	10.78%

From the interval of 1992-1997 through the interval of 2017-2022, the six-year rolling average of human-caused grizzly bear mortalities ranged between 10.8 and 40.8 grizzly bears (Table 3, column 2). The six-year rolling average of train-caused grizzly bear mortalities for the same period ranged from less than 1.0 to 3.0 grizzly bears per year (Table 3, column 3). The six-year rolling average of train-caused mortalities as a percent of all human-caused mortalities ranged between 3.0 and 16.8 percent per interval (Table 3, column 4).

From the interval of 1992-1997 through the interval of 2017-2022, the six-year rolling average of human-caused female grizzly bear mortalities ranged between 4.67 and 15.33 female grizzly bears (Table 3, column 5). Of the human-caused female mortality for the same period, the six-year rolling average of train-caused female mortalities ranged between 0.5 and 1.33 grizzly bears per year (Table 3, column 6). For example, during the interval 2011-2016, there were, on average, 11.17 human-caused female grizzly bear mortalities in the NCDE per year. Of those 11.17 human-caused female grizzly bear mortalities, on average, 0.5 mortalities were caused by trains operating in the NCDE representing 4.48 percent of all human-caused female mortalities in the NCDE. From the interval of 1992-1997 through the interval of 2017-2022, the six-year rolling average of train-caused female mortalities as a percent of all human-caused female mortalities ranged between 4.48 and 17.78 percent per six-year period (Table 3, column 7). The average percent of all human-caused mortalities of grizzly bears attributed to trains for all 6-year periods (covering 30 years) was 10.32 percent and the average percent of all human-caused female grizzly bear mortalities attributed to trains for all intervals was 10.78 percent.

In 2023, there were three train-caused grizzly bear mortalities. That produces a six-year rolling average of 2.7 grizzly bear mortalities from 2018 through 2023.

Based on the foregoing, BNSF estimates incidental take of as many as **19** bears for the Permit Term (7 years x 2.7 = 18.9). That number may be inflated by the unusually high number of mortalities in 2019. If the six-year rolling average returns to its historic median of 2.2 grizzly bear mortalities per year, BNSF estimates a take of 16 grizzly bears over the Permit Term (7 years x 2.2 = 15.4). The annual mortality of grizzly bears attributed to trains may be higher than either figure in any one year of the Permit Term and could be higher overall given the increasing size and range of the NCDE population (see Sec. 3.4). It is reasonable, therefore, to assume that the rolling average will increase over the Permit Term and that as many as two additional grizzly bear mortalities (in addition to the long-term annual average) may occur over the Permit Term. This produces an estimated take of 18 to 21 grizzly

bears over the life of the 7-year permit. As discussed in Section 3.4, the NCDE grizzly bear population has experienced both population growth and range expansion. In 2004 the population was estimated at 765 individuals (Kendall et al. 2009). In 2022 it was estimated that the population had grown to 1,138 individuals (Costello and Roberts 2021). So, even though the number of individual grizzly bear mortalities attributed to human-causes has increased (Table 3), the Service recently concluded that the level of mortality as a proportion of the estimated population size (*i.e.*, mortality rate) has remained relatively constant and that human-caused mortality rates have been low enough to allow the NCDE population to increase in number and range (USFWS 2022, p. 146-147). Thus, the population can absorb the estimated level of incidental take attributed to BNSF Operations. As field studies provide on-going population estimates, the latest information will be evaluated under the adaptive management framework to validate the incidental take analysis.

#### **4.4 Incidental Take and How the HCP Mitigation Program Will Offset Incidental Take**

##### ***4.4.1 Effect of the Incidental Take***

The effect of incidental take is a loss of individual grizzly bears from the NCDE grizzly bear population. If incidental take involves loss of a female grizzly bear, the effect is a long-term reduction in recruitment to the NCDE.

##### ***4.4.2 How the HCP Mitigation Program Will Offset Incidental Take***

The most meaningful way to offset the loss of female grizzly bears and reduced recruitment in the NCDE is to reduce human-caused grizzly bear mortality for all grizzly bears and especially females in and around the NCDE. The growth of the grizzly bear population and the expansion of its range has produced human-bear conflict throughout the NCDE. This is reflected in the fact that the total number of human-caused mortalities has risen each year since 2005.<sup>13</sup> Thus, taking steps to reduce human-caused grizzly bear mortality is one way to offset the loss of female grizzlies and reduced recruitment into the NCDE population.

The HCP mitigation measures will offset incidental take by providing the funding and structure to implement programs that reduce human-caused mortality in the HCP Corridor and elsewhere in the NCDE. The mitigation program and how it will offset the effects of incidental take are described in detail in Section 5.4. Briefly, the HCP will reduce human-caused grizzly bear mortality in the NCDE through the funding of conflict mitigation actions including:

- funding for the Administrator for administration and GNESEA for conflict mitigation actions in the NCDE such as bear fairs that include public education, information on attractants, and opportunities to practice the use of bear spray;

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<sup>13</sup> Train-caused grizzly bear mortality as a percent of overall human caused mortality for the six-year period from 2005-2010 was 12.4%. For the most recent period (2017-2022) it is 5.7%.

- funding for salaries and operational costs to support three additional seasonal grizzly bear technicians<sup>14</sup> working in the Permit area to provide and implement public outreach, conflict responses, and attractant reduction programs<sup>15</sup>;
- funding for the purchase of additional equipment (*e.g.*, radio collars and remote cameras) to track bear locations and/or monitor potential attractants and conflict areas;
- funding for and to support additional hunter education on black bear and grizzly bear identification and use of bear spray to reduce mortality attributed to mistaken identities and defense of life;
- funding for waste management programs to prevent commercial dumpsters and residential garbage pick-up and/or transfer stations from food-conditioning bears leading to human-grizzly bear conflict mortalities; and,
- funding for fencing, including electric fencing, to prevent livestock from entering the right-of-way and to secure attractants to prevent food-conditioning, and defense of life mortalities.

The grizzly bear management programs implemented by MFWP and the Blackfeet Nation foster public awareness and support of grizzly bear conservation. The programs resolve human-grizzly bear conflicts and reduce the potential for conflicts through education and information regarding attractant storage. Prompt and efficient management of bears involved in conflict, coupled with outreach and education, may positively influence human attitudes about grizzly bears and help to reduce illegal killings (Servheen et al. 2004 as cited in NCDE Subcommittee 2020). The results of bear manager programs are summarized biannually at IGBC Subcommittee meetings and in MFWP bear manager annual reports available at <http://fwp.mt.gov/regions/r1/> and <http://igbconline.org/n-continental-divide-subcommittee/>

Securing human food and garbage from grizzly bears can dramatically reduce the number of grizzly bears removed through management actions (Gunther 1994). The number of grizzly bear conflicts also drops after construction of electric fencing around attractant sites (see Agency Summaries in Schwartz and Haroldson 2001). Monitoring in the SE and CYE, including Canada, has shown that human-grizzly bear conflict mitigation programs have resulted in a significant reduction in human-caused mortality rates, increased inter-population connectivity, and improved habitat effectiveness (Proctor et al. 2018).

Mitigation funding through this HCP will enhance the ability of the agencies charged with grizzly bear management to abate conflicts before they occur and to respond with non-lethal measures when conflict does occur.<sup>16</sup> Placing more grizzly bear managers in the field and providing them with more resources to educate, secure attractants, and track bear movements will reduce the likelihood of “problem” bears

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<sup>14</sup> This funding may also, on approval from the Service, be used to extend seasonal bear manager positions allowing additional bear-conservation efforts year-round.

<sup>15</sup> The number and assignment of these additional grizzly bear technicians will depend on whether and how the BFWD chooses to participate in the HCP programming. The original concept was that one grizzly bear technician (“GBT”) would be assigned to MFWP Region 1, one GBT would be assigned to MFWP Region 4, and one GBT would work for BFWD. This is still the preferred allocation of these resources.

<sup>16</sup> The types of funding (*e.g.*, for personnel, equipment, fencing) and the amounts (*see* Table 6, *infra*) were identified and suggested by the HCP Technical Committee. The funding supplements amounts budgeted for grizzly bear management by federal, tribal and state agencies.



and will identify and address “problem” bears before they become habituated and must be removed from the population.

Based on the evidence described in Proctor et al. 2018 and the ongoing grizzly bear management program implemented in the NCDE where the population is stable or increasing, the mitigation program for this HCP is anticipated to more than offset the take associated with the covered activities.

## **5.0 CONSERVATION MEASURES**

### **5.1 BNSF Business and Conservation Goals and Objectives**

The HCP process recognizes BNSF’s need to balance opportunities for conservation and business realities. To that end, the development of an HCP allows the Applicant to consider its own business objectives when designing conservation measures.

BNSF Operations are integral to interstate commerce and international trade. BNSF operates a rail line that transports people, agricultural products, raw materials, and manufactured goods from around the U.S. and the world. Any regulatory or other action that disrupts BNSF Operations can have a significant ripple effect throughout the economy.

Further, the Permit Area is an integral part of the BNSF network. Approximately 100 million gross tons of freight (and approximately 715 passenger trains) traveled through the Permit Area in 2018. Freight included grain from the Midwest and manufactured and consumer goods from various ports along the Pacific coast. Any regulatory or other action that increases the cost of BNSF Operations in the Permit Area will affect prices paid by shippers, growers, manufacturers, and, ultimately, consumers.

BNSF Operations in the Permit Area are supported by union employees and independent contractors. The job descriptions and responsibilities of these employees and contractors are governed by contracts that affect employees and contractors throughout the BNSF network. Any regulatory or other action that might impose duties/responsibilities on these employees and contractors may be unenforceable by BNSF under the terms of those contracts.

In addition, the right-of-way that runs through the Permit Area is vital to national security. Section 2.3, *supra*.

The BNSF business goals and objectives identified below reflect these facts and were an integral part of identifying appropriate grizzly bear conservation measures.

**BNSF Goal 1:** Create regulatory predictability to enable BNSF to make reasonable, long-term business decisions (*e.g.*, infrastructure and jobs).

#### **Objectives:**

- a. Manage BNSF Operations in a profitable manner over the long-term.
- b. Protect certainty and confidence for long-term business planning and investment.
- c. Ensure safe and timely delivery of people and goods.

- d. Preserve a vital transportation corridor and critical infrastructure for national security.

**BNSF Goal 2:** Implement cost-effective conservation so that finite resources can be allocated where they provide the most benefit.

**Objectives:**

- a. Implement measures that provide the greatest amount of conservation for the lowest cost.
- b. Ensure conservation benefits are commensurate with expenditures.

**BNSF Goal 3:** Apply conservation resources in areas showing the greatest scientific certainty of a conservation benefit and that are biologically relevant to the Permit Area.

**Objectives:**

- a. Base conservation actions and decisions on scientifically credible data.
- b. Apply conservation actions to the NCDE population of grizzly bears.

**BNSF Goal 4:** Promote the success of the HCP by developing a plan that is practical to implement while maintaining BNSF management flexibility and predictability.

**Objectives:**

- a. Develop commitments that can be clearly understood and easily implemented by BNSF managers, supervisors, and crews.
- b. Utilize adaptive management to modify conservation commitments based on new information over the Permit duration.

## **5.2 HCP Biological Goals and Objectives**

The HCP *biological goals* are the broad, guiding principles for the conservation program (USFWS and NMFS 2016). The biological goals outline the minimization and mitigation strategy. The *biological objectives* are the measurable targets needed to achieve the biological goal. Individual *commitments* made by an HCP applicant are the specific actions the applicant will take to give effect to the biological objectives.

The HCP has two biological goals:

- 1) **HCP Biological Goal 1:** Promote safety for humans and bears in the Permit Area by reducing attractants in the right-of-way, thereby reducing grizzly bear mortality caused by BNSF trains to the maximum extent practicable.
- 2) **HCP Biological Goal 2:** Contribute to the recovery of the NCDE grizzly bear population by offsetting unavoidable incidental take through programs that reduce other sources of human-caused mortality within the Plan Area.

The first biological goal will minimize the potential for bear/train collisions by working to eliminate those things (*e.g.*, food sources) that draw grizzly bears into the right-of-way. The second biological goal will mitigate train-caused grizzly bear incidental take to the maximum extent practicable

Progress toward these biological goals will be measured by the seven biological objectives identified below. Specific commitments to attain the biological objectives and thereby achieve the biological goal are listed below in Section 5.3 and 5.4.

The guiding principle underlying the biological goals, biological objectives, and commitments comes from the Grizzly Bear Recovery Plan (USFWS 1993), which states that minimizing direct human-caused grizzly bear mortality is necessary for the conservation and recovery of the grizzly bear. The achievement of these goals and objectives will ensure that the Permit will not diminish the likelihood of the survival and recovery of grizzly bears in the wild.

Table 4 outlines the biological goals and objectives contained in the HCP and the environmental policy (EP), minimization and mitigation measures (MN and MT, respectively) committed to address them. The details of the commitments are described below.

<b>Table 4. HCP Biological Goals, Objectives, and Commitments.</b>	
<b>Biological Goal 1</b> - Promote safety for humans and bears in the Permit Area by reducing attractants thereby reducing grizzly bear mortality caused by BNSF trains to the maximum extent practicable.	
<u>Objective 1:</u> Determine the cause of bear-train strikes as soon as they occur.	EP-1 – Implement the BNSF Environmental Policy MN-1 – Bear Strike Notification Protocol MN-2 – General Notification Protocol MN-3 – HCP Technical Committee Review of Train-Caused Grizzly Bear Mortality in the Permit Area
<u>Objective 2:</u> Minimize bear attractants in the right-of-way.	MN-4 – Apply the Rapid Response Protocol as needed MN-5 – Identify Leaking Grain Trains MN-6 – Conduct Track Inspections MN-7 – Implement Vegetation Management MN-8 – Revegetate Disturbed Areas with Approved Seed Mixes MN-9 – Implement Livestock Control Measures MN-10 – Implement Carrion Removal MN-11 – Conduct Spring Sweep for Carrion MN-12 – Implement Maintenance and Contractor Sanitation Briefings MN-13 – Address Waste Disposal When/If Observed
<u>Objective 3:</u> Reduce grizzly bear train strikes at high risk areas in the Permit Area.	MN-14 – Explore Additional Technologies
<b>Biological Goal 2.</b> Contribute to the recovery of the NCDE grizzly bear population by offsetting unavoidable incidental take in the Permit Area through programs to reduce other sources of human-caused mortality within the Plan Area.	
<u>Objective 4:</u> Implement conflict mitigation actions to reduce grizzly bear conflicts that contribute to human-caused mortality in the NCDE.	MT-1 – Provide funding to support Administrator for the administration of the HCP MT-2 and MT-3– Provide funding for salaries and operational costs for three additional seasonal grizzly bear technicians MT-4 – Provide funding for the purchase of equipment used by grizzly bear technicians MT-5 – Provide funding for the purchase and implementation of bear-resistant garbage containers and dumpsters in chronic problems areas and communities where bears are expanding their range and install/repair fencing to prevent livestock from accessing the right-of-way and for fencing to secure attractants to prevent food-conditioning. MT-6 – Provide funding to conduct additional bear hunter education trainings and train hunters in the use of bear spray to prevent mortality from mistaken identity and defense of life.

EP = Environmental Policy, MN = Minimization Measures, and MT= Mitigation Measures

### 5.3 HCP Commitments to Avoid and Minimize Take in the Permit Area

The first biological goal of the HCP is to promote safety for humans and bears in the Permit Area by reducing attractants in the right-of-way thereby reducing grizzly bear mortality caused by BNSF trains to the maximum extent practicable. Biological objectives 1, 2, and 3 and the associated HCP commitments fulfill this goal as described below.

**5.3.1 Biological Objective 1: Implement a system to document grizzly bear train strikes in the Permit Area and identify factors contributing to the strike.**

A prompt and uniform response to train-caused grizzly bear mortality is critical to understanding the factors that contribute to grizzly bear strikes in the railbed. Establishing a policy of environmental stewardship and a notification and documentation protocol for train-caused grizzly bear mortality ensures the timely assessment and collection of data at the site of an incident. Maintaining detailed records of train strikes may facilitate a better understanding of contributing factors and grizzly bear behaviors that are causing grizzly bears to enter the railroad right-of-way (*e.g.*, are the grizzly bears being attracted to the right-of-way or are they merely caught crossing the right-of-way as part of their natural movements).

EP-1: Implement the BNSF Environmental Policy

BNSF commits to continuing to operate in the Permit Area according to its Environmental Policy.

*Rationale:*

The BNSF Environmental Policy is a statement of BNSF environmental philosophy and approach. While this policy is not rigid and does not compel action by BNSF, it forms the philosophical foundation for minimizing the potential for grizzly bear take incidental to BNSF Operations and for moderating the consequences of any incidental take due to BNSF Operations.

BNSF Environmental Policy promotes Operations that are conducted in a manner that protects the environment. All elements of BNSF Operations are conducted in compliance with the Environmental Policy and its commitments to environmental protection. BNSF Environmental Policy supports the goals of minimizing grizzly bear take incidental to BNSF Operations, reducing other human-caused grizzly bear mortality in the NCDE, and protecting grizzly bear habitat.

MN-1: Bear Strike Notification Protocol

Upon witnessing or discovering any bear that has been struck by a train in the Permit Area, the train crew member will report the event to BNSF Dispatch as soon as practicable. The Service, State, and Tribal bear managers will be notified pursuant to the protocol established by the HCP technical committee. The crew member will provide the dispatcher with the following information: (1) the time of the event; (2) the location of the event; (3) the identification number of their train; (4) the species of bear struck, if known; (5) the direction of train travel at the time of the event/observation; and (6) the outcome of the collision (*i.e.*, did the event result in either an injury or fatality, or is the outcome unknown). BNSF and Amtrak will cooperate in any investigation.

The witnessing crew member will also record same information in the *Train Activity Report/Safety Checklist* along with the time the information was reported to the dispatcher and the initials of the dispatcher receiving the information. A copy of this report is mailed to the appropriate BNSF manager by the crew member at the end of their shift or when reasonably feasible, as directed by BNSF in its current General Notice. A copy will also be mailed to an HCP technical committee representative to be determined by the committee.

*Rationale:*

Grizzly bear mortality in the Permit Area must be investigated to determine the reasons for the bear's presence in the right-of-way. The train crew member that either witnesses a grizzly bear strike or observes an injured or dead grizzly bear is in the best position to promptly report the event. Information gleaned through these investigations will help BNSF, state, federal, and tribal agencies identify sources of attractants, identify patterns of strikes, establish measures to address new attractants, or modify existing commitments that are ineffective.

MN-2: General Notification Protocol

Upon witnessing or discovering any dead or injured bears in the right-of-way, train crews will report the event to BNSF Dispatch as soon as practicable. The Service, state, and tribal bear managers will be notified pursuant to the protocol established by the HCP technical committee. The crew member will provide the dispatcher with the following information: (1) the time of the event; (2) the location of the event; (3) the identification number of their train; (4) the species of bear struck, if known; (5) the direction of train travel at the time of the event; and (6) the outcome of the collision (i.e., did the event result in either an injury or fatality, or is the outcome unknown). BNSF and Amtrak will cooperate in any investigation.

The witnessing train crew member will record the same information in the *Train Activity Report/Safety Checklist* along with the time the information was reported to the dispatcher and the initials of dispatcher receiving the information. A copy of this report is transmitted to a designated BNSF manager by the crew member at the end of their tour of duty. A copy will also be transmitted to an HCP technical committee representative to be determined by the committee.

*Rationale:*

Train crews will report any potential or suspected bear strike or other mortality in the right-of-way so that a bear manager can determine whether a bear was injured or killed and, if so, whether the dead or injured bear is a grizzly bear. For the reasons stated above for MN-1, it is important to document and investigate any grizzly bear mortality within the NCDE.

MN-3: HCP Technical Committee Review of Train-Caused Grizzly Bear Mortality in the Permit Area

At its annual meeting, or on an as-needed basis, BNSF, the Service, and the HCP technical committee will review all reports of grizzly bear mortality incidental to BNSF Operations in the Permit Area. The HCP technical committee will review the reports and materials from on-site investigations conducted under the Train Strike and General Notification commitments (MN-1 and MN-2), eyewitness statements, and any other relevant information. The purpose of the review is to evaluate and interpret the factors contributing to the mortality. The data may be used to identify new sources of attractants in the Permit Area, to identify patterns and sources of mortality over time, to evaluate the effectiveness of the existing commitments at eliminating attractants in the Permit Area, to discuss the feasibility of implementing new measures to minimize train strikes (*see*, MN-14 below), and to determine if new measures are needed to avoid future mortality. The information may be used to inform the effectiveness monitoring and adaptive management program.

*Rationale:*

The HCP technical committee is made up of representatives from BNSF and Amtrak, and the most knowledgeable and experienced grizzly bear managers from state, federal and tribal agencies in the lower 48 states. Therefore, the HCP technical committee is in the best position to review and analyze data relating to train-caused grizzly bear mortality. The HCP technical committee has the requisite expertise to draw supportable conclusions from the information that can be used to adapt the HCP if needed and guide BNSF ongoing response to minimizing grizzly bear mortality attributable to BNSF Operations.

***5.3.2 Biological Objective 2: Reduce attractants in the right-of-way that contribute to grizzly bear train strikes in the HCP Corridor***

The primary attractants in the HCP Corridor are spilled grain, fruiting shrubs or succulent vegetation, and carrion.

Most grain spills come from one of two sources: a derailment causing a grain spill or grain leaking from a grain car. Grain spill commitments include implementing a rapid response when a major spill occurs and promptly removing grain that has been spilled. By promptly removing spilled grain, bears will not become conditioned to seek grain in the right-of-way and will be less likely to walk the tracks in search of food.

Fruiting shrubs or succulent herbaceous plants may attract grizzly bears to forage in the right-of-way. Other wildlife may also be attracted to foraging opportunities in the right-of-way and be struck and killed creating carrion that attracts bears. Vegetation management commitments include managing all vegetation within 14 feet from track center on either side of the tracks. Additional vegetation management along the right-of-way may be evaluated and addressed as needed.

Wildlife and livestock may be struck by a train, creating carrion on or immediately adjacent to the railbed, which may attract bears. Fencing and removing grain and vegetation from the railbed will reduce the likelihood of wildlife and livestock foraging in the corridor and becoming carrion. Prompt removal of carrion will avoid and minimize this source or attractant to grizzly bears in the HCP Corridor.

The commitments to reduce attractants in the HCP Corridor are described below.

**MN-4: Consult and implement, where appropriate, Rapid Response Protocol**

BNSF will consult its Rapid Response Protocol following a derailment or large spill of grain or other food attractants in the HCP Corridor and implement as appropriate.

*Rationale:*

In the past, railcar derailments in the HCP Corridor have resulted in grain spills onto or adjacent to the railroad right-of-way that have attracted grizzly bears. A few grizzly bears became food-conditioned to the spilled grain and several were killed by trains near the grain spill due to inadequate clean-up at the

spill. Some of the food-conditioned bears were ultimately removed from the population because of continuing conflicts with humans.

Based on this experience with spills in the HCP Corridor, BNSF, in consultation with the Service and GNESEA, developed a Rapid Response Protocol to use when responding to large grain spills following a derailment or other accident in the Permit Area. The Protocol includes guidelines and considerations for responding to major grain spills. The Rapid Response Protocol provides a consistent and predictable decision-making and response framework to major grain spills occurring in the HCP Corridor. Hence, using the Protocol, BNSF will respond to major grain spills in a uniform and effective manner.

The Rapid Response Protocol was used in 2004, 2005, and 2024 following significant grain spills. There were no grizzly bear mortalities associated with any of these spills.

If needed, BNSF may update or amend the Protocol over the Permit term.

#### MN-5: Conduct Car Inspections

Currently, grain cars are visually inspected when loaded and at various points along the way (*e.g.*, in railyards). A grain car that is leaking product will be set out for repairs. Rail customers and BNSF benefit from minimizing lost product.

#### *Rationale:*

Grain accumulating in the railbed from leaking railcars is one of the attractants that can draw grizzly bears or other wildlife onto the railroad right-of-way. Accumulations of grain may occur when a train with a leaking car is stopped for a long period on a siding. Grizzly bears have been known to look for spilled grain in the railroad right-of-way. Other wildlife attracted to the grain in the right-of-way may be killed by passing trains, and the resulting carrion may further attract grizzly bears to the right-of-way to feed.

The potential problems associated with grain accumulation are eliminated if the grain is prevented from spilling in the first place. The best way to prevent grain cars from leaking is to identify a leaking car before it enters the HCP Corridor.

#### MN-6: Conduct Track Inspections and Remove Grain as Appropriate

In accordance with federal regulation, BNSF track inspectors currently inspect portions of the tracks in the HCP Corridor for safety reasons. Track inspection frequency and content is regulated by the FRA. BNSF also instructs its employees working in the corridor to watch for and report accumulations of grain within the railbed. If the grain accumulation is small, the track inspector will promptly remove the grain when safe and practicable. If the track inspector does not have the proper equipment or is not able to complete the prompt removal of the grain, a track maintenance crew will be scheduled to remove the grain as soon as practicable.



*Rationale:*

Prompt removal of grain from the right-of-way will minimize the potential for grain to become an attractant to grizzly bears or other wildlife. Because of their familiarity with and frequent presence in the right-of-way, track inspectors are uniquely situated to identify grain spillage and remove accumulations of grain promptly; however, all BNSF employees working in the corridor are encouraged and empowered to report spills or accumulations of grain.

MN-7: Implement Vegetation Management

BNSF takes steps to reduce vegetation growing in the railbed that may attract grizzly bears or other wildlife. Herbicides used in this process are regulated by FIFRA. Persons applying these herbicides must be licensed pesticide applicators or work under the direct supervision of a licensed applicator. BNSF actively manages vegetation 14 feet from the center line on either side of track. BNSF Manager of Vegetation Management is also available to evaluate and, as needed, address concerns relating to an attractant growing within the right-of-way, but outside the area of active vegetation management.

*Rationale:*

Vegetation is undesirable within the railbed for many reasons, not the least of which is to prevent wildlife from lingering along the tracks to feed. Food source vegetation growing in the railbed may attract grizzly bears to the tracks where they have a higher chance of being struck by a passing train. Succulent vegetation sprouting within the railbed is a potential food source for grizzly bears and other wildlife, especially during the spring. By managing vegetation growing within the railbed and removing attractants from the broader right-of-way, if warranted, BNSF will minimize the likelihood that grizzly bears will be attracted to the railroad tracks.

MN-8: Revegetate Disturbed Areas with Approved Seed Mixes

BNSF uses the same process for selecting seed mixtures as MDT when revegetating right-of-way lands that have been disturbed due to construction, derailments, or other land disturbances. The process includes working with contractors and interested parties to select seed mixtures that will stabilize soils without attracting animals (grazing animals and/or predators).

*Rationale:*

Prompt revegetation of disturbed areas is critical to prevent erosion and water quality problems. In the past, however, some seed mixes used to provide soil stability contained vegetation types that could attract grizzly bears (e.g., clover, dandelions, and orchard grass). BNSF references the MDT-process for selecting seed mixtures because just as MDT wants to avoid attracting animals to the margins or median of a highway, BNSF wants to avoid attracting animals to the right-of-way. Thus, the use of the MDT process for selecting seed mixes will minimize the likelihood that grizzly bears will be attracted to the railroad right-of-way, either by the plants themselves or by the animals who might eat the plants.

#### MN-9: Implement Livestock Control Measures

BNSF will monitor for livestock collisions occurring within the HCP Corridor. If a pattern of livestock collisions is identified in a segment of track, BNSF, in coordination with Administrator and the HCP technical committee, will work with adjacent ranchers and landowners to improve livestock control measures in the area. This may include improvements to existing fencing and/or additional fencing as practicable. If practicable, this work will be done prior to the next grazing season turn-out date to prevent livestock from entering the right-of-way unless other circumstances beyond BNSF control prevent this action. *See also* MT-8, *infra*.

#### Rationale:

Livestock carrion may attract grizzly bears to the right-of-way to feed. Fencing has been an effective tool to keep livestock out of the right-of-way. BNSF has fenced over 100 miles of the right-of-way to control livestock and prevent the accumulation of carrion. BNSF will continue to install fencing where warranted and maintain its existing fencing as needed to address patterns of livestock collisions.

Fencing has its limitations. BNSF cannot fence the entire right-of-way. For example, BNSF cannot fence grade crossings. BNSF cannot require its neighbors to install or repair fencing. Fencing may be destroyed or ineffective during winter months when heavy snow is present. And fencing installed by BNSF has been damaged and stolen by third parties.

This minimization measure will work in concert with mitigation measure MT-8 below.

#### MN-10: Implement Carrion Removal

BNSF instructs train crews and track inspectors working in the Permit Area to watch for and report accumulations of carrion. Additionally, in accordance with federal regulation, BNSF inspects portions of the tracks in the HCP Corridor for safety reasons. Track inspection frequency and content is regulated by the FRA. During these track inspections, the track inspector will look for carrion on or immediately adjacent to the railbed. If carrion is spotted the track inspector will promptly remove the carrion if safe and practicable. If the track inspector does not have the proper equipment or is not able to complete the prompt removal of the carrion safely, a track maintenance crew will be scheduled to remove the carrion. Other BNSF employees are frequently working in or travel throughout the Permit Area. Employees working in the Permit Area are briefed on identifying and reporting potential attractants that may be observed on or immediate adjacent to the railway roadbed. These employees may be asked to remove carrion if that work is included in their job duties/responsibilities.

#### *Rationale:*

Wildlife (*e.g.*, moose, elk, and deer) have been killed by trains in the HCP Corridor, and grizzly bears have been known to feed on this carrion. Removal of carrion as soon as practicable will minimize the likelihood that it will become a grizzly bear attractant. Because of their familiarity with and frequent presence in the right-of-way, track inspectors are uniquely situated to either remove livestock and wildlife carrion promptly or schedule the removal of carrion that may require the use of specialized maintenance equipment.

### MN-11: Conduct a Spring Sweep for Carrion

Annually, during the month of March or April, depending on the weather, BNSF will conduct a comprehensive sweep of the railbed to remove carrion that may have accumulated during the winter.

#### *Rationale:*

Trains may collide with wildlife at any time, but these incidents occur most often during the winter months when wildlife moves along the plowed right-of-way. While BNSF attempts to remove observed carrion from the right-of-way at all times of the year, these efforts are complicated by weather conditions and accumulations of snow that cover carcasses during winter. Any carrion that accumulates during the winter can be an attractive food source for grizzly bears foraging in the spring after emergence from hibernation. Removing accumulated carrion revealed by snow melt in April/May as grizzly bears are emerging from their dens will deter bears from lingering at the tracks pursuing this food source, or otherwise becoming food conditioned to its availability.

### MN-12: Maintenance and Contractor Briefings Regarding Sanitation

Currently, BNSF conducts safety briefings with all work crews and contractors working in the Permit Area. Within six-months of HCP implementation, BNSF will develop a formal briefing program or handout on the proper storage, handling, and removal of food and garbage for all work crews and contractors working in the Permit Area.

#### *Rationale:*

Grizzly bears may be attracted to refuse disposed of in the railroad right-of-way. BNSF crews or contractors conducting covered activities in the right-of-way are a potential source of refuse that could attract bears. BNSF can eliminate human food sources and prevent grizzly bears from becoming food conditioned to work sites on the right-of-way through proper briefings and handouts to work crews and contractors on the appropriate handling and storage of foods and attractants in the Permit Area.

### MN-13: Address Improper Refuse Disposal

During track inspections, BNSF will look for refuse improperly disposed of by third parties in the right-of-way. If such evidence is found, it will be reported to the Service. BNSF will work proactively with BNSF Resource Protection and law enforcement, as applicable, to address improper dumping of refuse. Amtrak's obligations with respect to MN-13 are addressed in Appendix A.

#### *Rationale:*

In addition to BNSF trains in the Permit Area, passenger trains operated by Amtrak also operate on BNSF rail lines in the Permit Area. Amtrak trains operating in the Permit Area are equipped with self-contained waste compartments and do not discharge human or other waste in the railroad right-of-way. Furthermore, it is against Amtrak policy to dispose of garbage in the railroad right-of-way. If, however, there is an accidental discharge of attractants, BNSF wants passenger train operators to be aware of the discharge so they can address the issue. Third parties may also access the right-of-way pursuant to a BNSF license, permit, or lease and it is possible that third parties may trespass on the right-of-way.

### ***5.3.3 Biological Objective 3: Reduce grizzly bear train strikes at physically constrained sections of the HCP Corridor.***

On some portions of the right-of-way, bears have been known to attempt to avoid oncoming trains by running down the track in front of the train rather than running off to one side. This typically happens in places where the track is elevated relative to the adjacent landscape or in steep cuts.

#### **MN-14: Explore New Technologies**

BNSF, in coordination with the Service and the HCP technical committee, will evaluate new technologies for dissuading grizzly bears from entering physically constrained areas of the right-of-way that increase the risk of a train strike (*e.g.*, physically constrained by topography). If the data (*e.g.*, bear observations) suggests that new or existing technology should be deployed, the technical committee and BNSF will work together to determine how the technology can be used in a manner that is safe and effective for rail application.

#### ***Rationale:***

There may be new/other technologies that can be used to dissuade grizzly bears from entering physically constrained areas of the corridor. If a pattern of mortalities suggests that a physical characteristic of the right-of-way is contributing to the bear strikes, new devices and methods will be evaluated to determine that they are effective, safe, and practicable. The HCP technical committee can help determine the implementation and use of various technologies as they become available. Through the approval of the committee, these technologies can be evaluated for effectiveness in a rail application.

## **5.4 HCP Commitments to Mitigate Unavoidable Take**

The second biological goal of the HCP is to contribute to the recovery of the NCDE grizzly bear population by offsetting unavoidable incidental take in the Permit Area through programs that reduce other sources of human-caused grizzly bear mortality within the Plan Area. Biological objectives 4 and 5 and the associated HCP commitments fulfill this goal as described below.

### ***5.4.1 Biological Objective 4. Implement conflict mitigation actions to reduce grizzly bear conflicts that contribute to human-caused mortality in the NCDE.***

The primary effect of incidental take attributed to BNSF operations is the loss of recruitment to the NCDE grizzly bear population. As discussed in Section 3.5.2, human-caused mortality is an important factor affecting grizzly bears at the individual and ecosystem level (USFWS 2022). Management removal mortalities are the leading causes of grizzly bear mortality in the NCDE (Table 2). Thirty-five percent of all management removals from 1975 to 2022 were female grizzly bears (Costello and Roberts 2021).

The best way to minimize conflicts between people and grizzly bears that lead to management removal mortalities is to prevent conflicts from occurring in the first place. Prevention can include a wide range of options such as education (brochures, press releases, presentations, Bear Fairs), increasing human tolerance, installing and maintaining an electric fence, and using bear-resistant garbage containers. One-

on-one communication with people that live and recreate in grizzly bear country is essential to preventing conflicts and establishing acceptance and tolerance for grizzly bears (MFWP 2019).

The decade-long implementation of such programs in the south Selkirk grizzly bear population unit has resulted in a decrease in human-caused mortality relative to the previous decade and compared to the adjacent population where no interventions were applied (Proctor et al. 2018 as cited in USFWS 2022, p. 330). In all three states where grizzly bear populations are increasing (Montana, Wyoming, and Idaho), Information & Education (I&E) outreach programs have been in place for several decades and grizzly bear specialists and technicians are employed to implement these programs, respond to management conflicts, and educate the public. Federal, State, and Tribal grizzly bear management programs for Montana recognize the effectiveness and long-term contribution to the viability of the grizzly bear population of public outreach and I&E programs. The Service cited the 2 to 3 percent annual growth of the NCDE population as evidence of the success of these programs (USFWS 2022, p. 160).

Therefore, the HCP technical committee identified a suite of programs for the NCDE that will, in the opinion of the HCP technical committee and based on the best available scientific evidence, reduce human-bear conflicts that lead to human-caused mortality.

MT-1: Fund the administrative duties of Administrator and GNESEA programming

BNSF will provide \$25,000 annually for the Permit term for the administrative duties of an Administrator in administering the BNSF Program funds and coordinating the efforts of the HCP technical committee. In addition, BNSF will provide \$25,000 in year 1 of the HCP for Administrator programming related to grizzly bears or GNESEA programming. This programming will focus on creating more/better grizzly bear awareness for people living and working in the NCDE.

*Rationale:*

The HCP includes funds to compensate Administrator to serve as the administrator of the HCP, collecting data, organizing meetings of the HCP technical committee, BNSF, and the Service, distributing the mitigation funds, and preparing annual reports. MOLF and GNESEA also implements their own grizzly bear conflict mitigation programs in the NCDE such as bear fairs. These programs are opportunities to educate the public on living with grizzly bears, to practice the use of bear spray, and to encourage use of deterrents such as electric fencing and bear-resistant garbage bins. As discussed above, management removals are the leading causes of human-caused grizzly bear mortalities in the NCDE and female grizzly bears represent 35 percent of those mortalities. Therefore, funding for public education programs is an important component of reducing management removals in the NCDE.

MT-2: Fund the salaries and operational costs for additional MFWP grizzly bear technicians.

BNSF will provide a total of \$1,354,000 over the life of the Permit to fund the salary of and operational costs (e.g., vehicle, gas, and other expenses required to fulfill the duties of the position) for one grizzly bear technician in MFWP Region 1 and one grizzly bear technician in MFWP Region 4. These are generally seasonal positions. This funding includes an additional pool of funds for equipment in year 1.

*Rationale:*

MFWP, in cooperation and with support of the Service, is the agency that is principally responsible for managing grizzly bears in Montana; and Regions 1 and 4 of the agency overlap the Permit Area. MFWP has pioneered a non-lethal management program that is used as a model for grizzly bear management throughout the state (Proctor et al. 2018). A similar program is implemented by the Blackfeet Nation and Confederated Salish and Kootenai Tribes.

The responsibilities of the grizzly bear managers and technicians are to monitor and manage the grizzly bear population as well as conduct outreach and education of the public to ensure the public feels safe and secure enough to accept coexistence with large, occasionally dangerous, carnivores like grizzly bears. Managers then focus on direct actions to reduce attractants that lead to human-caused mortality of grizzly bears. Funding for the salary and operational costs of technicians will provide additional staff and resources to address conflict mitigation actions in the Permit Area and in the communities where the resources are most needed. Conflict mitigation actions may include those programs recognized as critical to the increasing grizzly bear populations in the NCDE, GYE, and CE such as: public education, electrification of fences and enclosures, collaring of bears, placement of game cameras, and waste management programs to secure attractants at public facilities and private residences, responding to concerned citizens, addressing attractants before they become a source of conflict, and trapping and relocating grizzly bears in conflict situations.

Proctor et al. (2018) conducted an analysis of the effect of implementation of conflict reduction measures on human-caused grizzly bear mortalities in the U.S. portion of the SE and CYE. The conflict reduction measures implemented in the study by the existing grizzly bear management specialist since 2007 will be the same measures implemented by the additional grizzly bear management specialist employed under the HCP mitigation program. The study found a statistically significant decrease in human-caused grizzly bear mortalities in the Montana portion of the south Selkirk grizzly bear population unit after implementation of the grizzly bear management specialist (Proctor et al. 2018). Further, the authors analyzed a control population that received no conflict management efforts and found a statistically significant increase in human-caused grizzly bear mortalities (Proctor et al. 2018).

MT-3: Fund the salary and operational costs for additional BFWD grizzly bear technician.

BNSF will provide \$677,000 over the life of the Permit to fund the salary of and operational costs for an additional BFWD grizzly bear technician. This funding includes an additional pool of funds for equipment in year 1.

*Rationale:*

The Blackfeet Nation is a sovereign Native American nation responsible for managing grizzly bears on the Blackfeet Indian Reservation (“BIR”), which overlaps the Permit Area. Grizzly bear managers from BFWD implement conflict mitigation programs on the Blackfeet Nation like those implemented by MFWP biologists and technicians throughout Montana. The NCDE population is growing and expanding its range beyond the eastern front of the Rockies. As the population expands, more communities, ranches, and residential areas on the BIR are reporting human-grizzly bear conflicts. Providing the BFWD with the funds to hire additional staff will allow them to expand their conflict

mitigation activities to reduce human-cause mortality on the BIR, and as the grizzly bear population expands, will allow them to reach additional communities, ranches, and residential areas on the Blackfoot Indian Reservation.

The funding described above for additional grizzly bear technicians for MFWP and BFWD is based on the assumption that both agencies will choose to enter into an agreement with BNSF to staff these positions. If one of the agencies chooses not to accept the funding committed under MT-2 or MT-3, funds would be shifted to the other agency for additional grizzly bear technician positions, expansion of bear technician roles (from seasonal to year-round), and/or equipment to support existing technicians to ensure that the mitigation commitment is met regardless of which agency implements it. Decisions about how to allocate shifted funds will be made by Permittee in consultation with the Administrator, the HCP technical committee and USFWS. In sum, the amount of funds committed to this work will not change, but how the funds are allocated may change depending on MFWP and BFWD.

MT-4: Fund the purchase of equipment.<sup>17</sup>

BNSF will provide \$400,000 in year 1 of the Permit for the purchase of equipment used for grizzly bear management in the Permit Area over the Permit term. This might include radio collars, game cameras, and “chargers” used to electrify fences and enclosures. This equipment will be primarily for the use of the bear managers funded by MT-2 and MT-3 above, but may be used by other bear managers/agencies as the Technical Committee sees fit.

*Rationale:*

Radio-collaring grizzly bears is instrumental to managing them. Collars can be programmed to record locations at intervals of 1 to 4 hours during the non-denning season and can be programmed to take more frequent readings when a grizzly bear comes into proximity of residential areas. This level of information is invaluable for determining the appropriate management response and eliminating the need for unnecessary capture of a grizzly bear. For example, a grizzly bear may enter densely populated areas to seek natural food sources and move on when the food is depleted. This grizzly bear may at first appear to be entering a conflict situation. Using the collar to track its movements precludes the need to capture a grizzly bear that ultimately moves on. A radio-collared grizzly bear spending a disproportionate amount of time in a location may also allow the identification of a previously unidentified attractant. This allows grizzly bear managers to work with local landowners to address attractants before a conflict occurs and to deploy deterrents to encourage the grizzly bear to move on to a different food source. Stopping a food reward prevents a grizzly bear from becoming a management removal, which ultimately reduces human-caused mortality.

Bear managers deploy remote cameras to monitor potential conflict situations and to monitor grizzly bear capture sites. The purchase of additional remote cameras will allow their deployment to more locations to monitor potential conflict sites, evaluate the effectiveness of mitigation actions applied, ensure timely responses to conflicts, and reduce the need to capture and handle grizzly bears by preventing conflicts before they occur. Remote cameras are also used to monitor effectiveness of

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<sup>17</sup> These Equipment/Program dollars are in addition to the Year 1 Supplemental Equipment funds identified in Table 6.

mitigation actions. Additionally, monitoring grizzly bears with a remote camera allows managers to give a grizzly bear time to move from the area on its own accord rather than pre-emptively capturing it.

Chargers are used to electrify existing fencing and enclosures as a way to deter bears from entering fields, bee yards, lambing grounds, etc.

#### MT-5: Fund a waste management & fencing program.

BNSF will provide total of \$300,000 in year 1 of the Permit to fund waste management and fencing programs over the life of the Permit. This program may include purchase of bear-proof residential and/or commercial garbage receptacles and/or the electrification or fencing of waste transfer stations. This equipment will be primarily for the use of the bear managers funded by MT-2 and MT-3 above, but may be used by other bear managers/agencies or communities as the Technical Committee sees fit.

#### *Rationale:*

Bears are attracted to garbage at individual residences and community refuse disposal sites. Providing “bear-resistant” containers and securing disposal sites is a proven method to reduce the potential for bear conflicts (Breck et al. 2006). Adequately securing garbage and other attractants before they are picked up by collectors is a major challenge in rural neighborhoods.

Funding for waste management will enhance GNESEA and the grizzly bear managers’ capacities to cost-share the purchase of bear-resistant containers with homeowners or loan out bear-resistant bins. Ideally, homeowners will become used to using the bins and purchase their own such that the income from the sale of the bin can be recycled back to purchase more bins. Funding will also allow GNESEA and grizzly bear managers to work with communities to create bear-resistant disposal sites in the Plan Area, including communities in the Blackfoot Valley, Middle Fork, and Rocky Mountain Front, where grizzly bears are expanding their range.

As noted above, livestock that is hit and killed in the right-of-way becomes carrion that attracts grizzly bears. BNSF maintains approximately 100 miles of fencing including the segment between East Glacier switch and Midvale to keep livestock out of the right-of-way. Fencing on land adjacent to the right-of-way is equally important. BNSF cannot require its neighbors to install fencing and BNSF cannot maintain fencing on private lands. BNSF can, however, make resources available to private landowners who want to install/maintain livestock control fencing adjacent to the right-of-way through Administrator and the HCP technical committee. Administrator and the HCP technical committee will work with the landowners who want to install/repair livestock control fencing adjacent to the right-of-way and use these funds to provide financial assistance where appropriate. Administrator and the HCP technical committee may also use bear-strike data to identify areas where fencing on private land is appropriate and approach those landowners about building/maintaining a fence.

Grizzly bears are also attracted to disposal sites, livestock calving areas, lambing pastures, orchards, individual fruit trees, commercial and private beehives, etc. Grizzly bear managers in Montana have used electric fencing to deter grizzly bear visits to these and other temporary attractants (Proctor et al. 2018, see also grizzly bear management reports at <http://fwp.mt.gov/regions/r1/>). Region 1, MFWP has an electric fence loaner program and currently has 13 electric fence energizers and net fences on loan to



landowners (MFWP 2018). BNSF will provide funds to expand the capacity and service area of the electric fencing program to conduct electric fencing workshops, to implement a cost-share electric fencing program, and/or deploy electric fencing to prevent conflicts that contribute to grizzly bear mortality.

#### MT-6: Fund and conduct black bear and general hunter education

BNSF will provide \$25,000 in year 1 to fund and conduct hunter education programs focused on bear identification and the effective use of bear spray. This funding is available for projects over the life of the Permit.

#### *Rationale:*

From 1975 through 2022, illegal mortalities were responsible for approximately 23.5 percent of the human-caused grizzly bear mortalities in and around the NCDE (Table 2). Illegal mortalities include mistaken identities, i.e., grizzly bears killed by black bear hunters, as well as defense of property and malicious/poaching. From 1975 to 2022, grizzly bear mortality attributed to self-defense accounted for nearly 10 percent of the human-caused grizzly bear mortalities in and around the NCDE (Table 2). Self-defense mortalities often occur during recreational encounters including those associated with hunters.

The State requires all black bear hunters pass a Bear Identification Test before receiving a black bear license; grizzly bear encounter management is a core subject of basic hunter education courses. The hunter education programs train hunters to avoid conflicts while actively hunting, to correctly identify black and grizzly bears to avoid mistakenly killing a grizzly bear, and to use bear spray in a defense of life situation. Additionally, I&E programs in the NCDE teach patience, awareness, and correct identification of targets for black bear and ungulate hunters (USFWS 2022). Financial support for black bear and general hunter education as well as I&E programs in the NCDE will allow MFWP to expand the existing program. Properly training more hunters will reduce the potential for conflicting situations and reduce grizzly bear mortalities related to mistaken identity or defense of life.

### **5.5 Changed and Unforeseen Circumstances**

Federal No Surprises Assurances (codified at 50 CFR 17.3, 17.22(b)(5), 17.32(b)(5); 50 CFR 222.307(g)) provides assurances to Section 10 permit holders that, as long as the permittee is properly implementing the HCP and the ITP, no additional commitment of land, water, or financial compensation will be required with respect to covered species, and no restrictions on the use of land, water, or other natural resources will be imposed beyond those specified in the HCP without the consent of the permittee. The No Surprises rule has two major components: changed circumstances and unforeseen circumstances.

#### **5.5.1 Changed Circumstances**

Changed circumstances are defined as changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the Service and that can be planned for (*e.g.*, the listing of a new species, or a fire, or other natural catastrophic event in areas prone to such an event) (50 CFR 17.3). If additional conservation and mitigation

measures are deemed necessary to respond to changed circumstances, and such measures were provided for in the HCP, the permittee will be required to implement such measures (50 CFR 17.22(b)(5)(i), 17.32(b)(5)(i); 50 CFR 222.307(g)(1)). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances, and such measures were not provided for in the HCP, the Services will not require any additional measures beyond those provided for in the HCP, without the consent of the permittee, provided the HCP is being properly implemented (50 CFR 17.22(b)(5)(ii), 17.32(b)(5)(ii); 50 CFR 222.307(g)(2)).

For the purposes of this HCP, the Service and BNSF have identified the following potential changed circumstances.

#### Change in Status of Grizzly Bears

The listing status of the grizzly bear may change during the Permit term. As noted above the Service is expected to announce a decision regarding the status of the NCDE grizzly bear population before the end of January 2025. BNSF will commit to fully fund the mitigation programs outlined in section 5.3 and 5.4 above *regardless* of the listing status of the NCDE population. In other words, BNSF will fund the mitigation for a full seven years whether or not the NCDE population of grizzly bears is listed as threatened.

#### New Listing of a Non-HCP Species

If a non-HCP species that occurs in the Permit Area and is impacted by rail operations becomes a federally listed species, the Service would notify BNSF. Options that might be pursued include:

- Development of a plan to avoid take of the newly listed species,
- Addition of the species to this HCP and Permit through an amendment,
- Application for a separate permit for the newly listed species through the section 10 process.

#### Take of Grizzly Bears Outside the Permit Area

The NCDE grizzly bear population size is increasing (Kendall et al. 2009, Mace et al. 2012, Costello et al. 2016, C.M. Costello 2020, *in litt.*) and its range is expanding (NCDE Subcommittee 2019). Therefore, it is reasonable to assume that over the Permit term, a train strike could result in mortality of grizzly bears outside the Permit Area. In the event this occurs, BNSF and the Service will meet to discuss the conditions under which the strike occurred and determine an appropriate response consistent with the adaptive management provisions below.

#### Incidental Take of Grizzly Bears in Excess of Anticipated Incidental Take

As noted, the grizzly bear population is increasing, and its range is expanding. In some years, as the population has increased, the total number of human-caused grizzly bear mortalities has also increased. If the take levels specified in Section 4.3.3 are exceeded for two years in succession, BNSF and the Service would meet to discuss the circumstances under which strikes have occurred and determine an appropriate response consistent with the adaptive management provisions below.

### **5.5.2 Unforeseen Circumstances**

Unforeseen circumstances are events affecting a species or geographical area covered by an HCP that cannot be reasonably anticipated and that result in a substantial and adverse change in the status of the covered species (50 CFR 17.3).

In deciding whether unforeseen circumstances exist, the Service shall consider, but not be limited to, the following factors (50 CFR 17.22(b)(5)(iii)(C) and 17.32(b)(5)(iii)(C); 50 CFR 222.307(g)(3)(iii)): (1) the size of the current range of the affected species, (2) the percentage of the range adversely affected by the covered activities, (3) the percentage of the range that has been conserved by the HCP, (4) the ecological significance of that portion of the range affected by the HCP, (5) the level of knowledge about the affected species and the degree of specificity of the conservation program for that species under the HCP, and (6) whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the species in the wild.

In negotiating unforeseen circumstances, the Service will not require the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water or other natural resources beyond the level otherwise agreed upon for the species covered by the HCP without the consent of the permittee (50 CFR 17.22(b)(5)(iii)(A); 50 CFR 222.307(g)(3)(i)). If additional conservation and mitigation measures are deemed necessary to respond to unforeseen circumstances, the Services may require additional measures of the permittee where the HCP is being properly implemented only if such measures are limited to modifications within conserved habitat areas, if any, or to the HCP operating conservation program for the affected species, and maintain the original terms of the plan to the maximum extent possible (50 CFR 17.22(b)(5)(iii)(B) and 17.32(b)(5)(iii)(B); 50 CFR 222.307(g)(3)(ii)). If unforeseen circumstances are found, the permittee is not required to come up with additional resources or funds to remedy unforeseen circumstances, but the Services and the permittee should work together to determine an appropriate response within the original resource commitments in the HCP.

Either BNSF or the Service may notify the other of a potential unforeseen circumstance. If the Service determines that additional conservation and mitigation measures are necessary to respond to an unforeseen circumstance where the HCP is being properly implemented, the additional measures required of BNSF must be as close as possible to the terms of the original HCP and must be limited to modifications within any conserved habitat area or to adjustments within lands or waters that are already set-aside in the HCP operating conservation program. Only with the consent of BNSF may additional conservation and mitigation measures involve the commitment of additional financial compensation or restrictions on the use of land or other natural resources otherwise available for development or use under the original terms of this HCP.

## **6.0 REPORTING REQUIREMENTS AND MONITORING MEASURES**

Monitoring is a mandatory element of all HCPs (see 50 CFR 17.22, 17.32, and 222.307). The Service and the applicant must ensure that the monitoring program of an HCP provides information to: (1) evaluate compliance, (2) determine if biological goals and objectives are being met, and (3) provide feedback information for an adaptive management strategy, if one is used. HCP monitoring is divided

into two types. Compliance Monitoring (referred to as Implementation Monitoring in this HCP) is verifying that the permittee is carrying out the terms of the HCP, permit, and Implementing Agreement. Effectiveness Monitoring evaluates the effects of the permitted action and determines whether the HCP commitments are achieving the biological goals and objectives.

### **6.1 Reporting Requirements**

At least once a year Administrator will convene the Service, BNSF, and the HCP technical committee for an annual meeting. The meeting is an opportunity to review the conflict mitigation actions that have occurred through the funding provided by BNSF, report on overall NCDE mortality trends, identify new or variations in mortality patterns, review train strike incidents, and determine if any commitments need to be changed. The outcomes of the annual meeting will be summarized by the Administrator into a report submitted to BNSF and the Service by March 31 of each year and shared publicly during the permit term.

### **6.2 Implementation Monitoring**

As part of its annual report prepared by Administrator, BNSF will include a certification to the Service that its avoidance and minimization measures (i.e., HCP Commitments EP1 and MN-1 through MN-14) are being implemented, including a full description of implementation actions.

### **6.3 Effectiveness Monitoring**

The HCP Handbook requires that an HCP specify the measures the applicant will take to “monitor” the impacts of the taking resulting from project actions [50 CFR 17.22(b)(1)(iii)(B) and 50 CFR 222.22(b)(5)(iii)]. Monitoring measures described in the HCP should be as specific as possible and be commensurate with the project’s scope and the severity of its effects.

Effective implementation of the HCP will (1) minimize, to the maximum extent practicable, grizzly bear take incidental to BNSF Operations in the Permit Area, and (2) mitigate unavoidable take incidental to BNSF Operations to offset any incidental take that does occur. BNSF will coordinate with the Service and HCP technical committee to annually review the circumstances associated with each instance of grizzly bear take incidental to BNSF Operations. The purpose of this review is to determine which, if any, of the incidents was avoidable; to consider additional measures which might further minimize the potential for train-bear collisions; and assess whether the number of train-related bear mortalities and specifically the percentage of female grizzly bears lost to train-related mortalities was within the anticipated level of incidental take.

It is not possible to quantitatively determine the number of human-caused bear mortalities that will be avoided through implementation of the HCP mitigation program. Members of the HCP technical committee will report their prevention, management, and bear monitoring activities funded by the HCP mitigation program. Through its monitoring and reporting, the HCP technical committee will determine the additional field work that was accomplished by the technicians; the additional bear monitoring that was enabled with the collars and cameras; lessons learned from that monitoring; the number of conflict sites that were abated through the BNSF-funded waste management materials and electric fencing program; and the number of additional hunter education classes offered. To the best of its ability, the

HCP technical committee will qualitatively assess the number of human-grizzly bear conflicts averted by these actions.

## **6.4 Adaptive Management**

“Adaptive management is a decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a ‘trial and error’ process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather, a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders” (Williams et al. 2009). In short, adaptive management is a tool that project proponents and regulators can use as gaps in knowledge and/or information are filled over time.

In brief, the HCP objectives are to (1) document grizzly bear train strikes and the factors contributing to the strike, (2) reduce train strikes by eliminating attractants in the right-of-way, and (3) offset human-caused grizzly bear mortality in and around the Permit Area. Members of the HCP technical committee agree that the minimization measures described in this HCP that are currently being implemented have minimized grizzly bear take incidental to BNSF Operations in the HCP Corridor. No other practicable measures to minimize take have been identified. Further, the HCP technical committee agrees that the mitigation program will effectively reduce grizzly bear mortality in and around the Permit Area. Nevertheless, several factors may contribute to the need to adaptively modify the HCP conservation strategy during the Permit term. These factors include (1) identification of new technologies that were not previously known or considered, (2) reallocation of resources to better minimize and mitigate for grizzly bear incidental take, and (3) an increase in incidental take attributed to train strikes that occur beyond the current Permit Area due to the increasing and expanding population of grizzly bears.

As Administrator, MFWP, the BFWD (or some subset thereof) and BNSF work together, improve data management and tracking, and meet to review the HCP minimization and mitigation program, new contributing factors to train strikes may be identified or new programs may be needed to offset grizzly bear mortality in the NCDE. If incidental take is exceeded or strikes occur outside the covered Permit Area, the HCP technical committee may also need to adapt the conservation strategy to employ measures in new areas. Further, as the grizzly bear population continues to increase and expand its range, new challenges and solutions may emerge. These factors will be adaptively managed at a mid-Permit term review.

### **6.4.1 Mid-Permit Term Review**

In year three of the Permit term, the HCP technical committee will review grizzly bear mortality data, reports from the programs/projects supported through this HCP, and advances in relevant technologies to determine whether any of the resources committed through this HCP should be redeployed or new programs considered. This process may include terminating projects or programs that have not been effective, expanding programs or projects that are effective, or developing new programs or projects

consistent with the Biological Goals of this HCP. Reallocation of resources would occur in the fourth year of the Permit.

This process does not include a mechanism for increasing the amount of resources provided by BNSF.

The mid-Permit term review gives the HCP technical committee the opportunity to assess the efficacy of the work being supported by the HCP and adjust that work, if necessary, to better minimize incidental take in the Permit Area and/or mitigate for grizzly bear incidental take authorized by the Permit.

## **7.0 HCP FUNDING AND IMPLEMENTATION**

The ESA and the implementing regulations [50 CFR 17 and 222] require that HCPs specify the measures the permittee will adopt to ensure adequate funding for the HCP. The Service should not approve an HCP that does not contain an adequate funding commitment from the applicant/permittee to support an acceptable monitoring program unless the HCP establishes alternative funding mechanisms. Therefore, it is necessary to determine the costs for HCP implementation and identify the funding sources that will support the HCP for its Permit term. This section identifies the costs of the HCP and identifies how the HCP will be funded.

The cost of the HCP is outlined in Table 6. The amount set out for minimization is a conservative estimate of what BNSF spends to manage the minimization components of this HCP. This amount does not include extraordinary expenses to prevent grizzly bear mortalities after a significant grain spill.<sup>18</sup> BNSF will fund all of the equipment/programming expenses for the Permit term in year 1. BNSF is committing a total of \$5,051,000 to its minimization and mitigation efforts.

The Service has reviewed the funding in Table 6 and has discussed what constitutes adequate funding with BNSF and the MFWP. The Service believes that the amounts shown in Table 6 are adequate to achieve the minimization and mitigation outlined in this HCP.

Funding for the HCP will come from BNSF's operations budget. BNSF's financial statements filed with the security and exchange commission can be viewed at <https://www.sec.gov/cgi-bin/browse-edgar?company=BNSF&owner=exclude&action=getcompany>. Given BNSF's financial resources, the number of years it has been operating in the Permit Area, and its demonstrated commitment to grizzly bear conservation in the Plan Area, the Service can be confident that BNSF will provide funds to support the HCP minimization and mitigation goals and objectives. Therefore, the Service has not required BNSF to undertake further assurances of its financial commitment to the HCP.

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<sup>18</sup> BNSF has spent more than \$200,000 to date to avoid mitigate impacts on grizzlies associated with the soybean spill near Essex in 2024. Monitoring and fencing at this location is anticipated to continue into Spring 2025.

**Table 6. HCP Funding**

	HCP IMPLEMENTATION YEAR						
	1	2	3	4	5	6	7
<b>MINIMIZATION</b>							
Minimization Measures	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
<b>Subtotal</b>	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
<b>MITIGATION</b>							
<b>Salaries/Operational Expenses</b>							
MFWP Bear Technician Region 4 (salary and operations)	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000
Year 1 Supp. Equipment - Region 4	\$54,000						
MFWP Bear Technician Region 1 (salary and operations)	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000
Year 1 Supp. Equipment - Region 1	\$54,000						
Bear Technician Blackfeet Nation (salary and operations)	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000
Year 1 Supp. Equipment-Blackfeet Nation	\$54,000						
Administrator	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
<b>Subtotal</b>	\$454,000	\$292,000	\$292,000	\$292,000	\$292,000	\$292,000	\$292,000
<b>Equipment/Programs (all funds provided in Year 1 of Permit)</b>							
Additional equipment to support bear technicians (Cameras, Collars, new technology)	\$400,000						
Waste management / Fencing	\$300,000						
Hunter education	\$20,000						
MOLF Bear Programming	\$25,000						
<b>Subtotal</b>	\$745,000	\$0	\$0	\$0	\$0	\$0	\$0
<b>TOTAL BY PERMIT YEAR</b>	\$1,499,000	\$592,000	\$592,000	\$592,000	\$592,000	\$592,000	\$592,000





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Costello, C. 2020. Email from Cecily Costello, MFWP Grizzly Bear Research Biologist to Jennifer Fortin-Noreus, USFWS Wildlife Biologist on January 17, 2020.

## APPENDIX A – IMPLEMENTING AGREEMENT

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**APPENDIX B – LOCATIONS OF GRIZZLY BEAR MORTALITIES IN THE PERMIT AREA**

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