IN THE MATTER of the Public Service Commission's Investigation into Railroad Safety

REGULATORY DIVISION

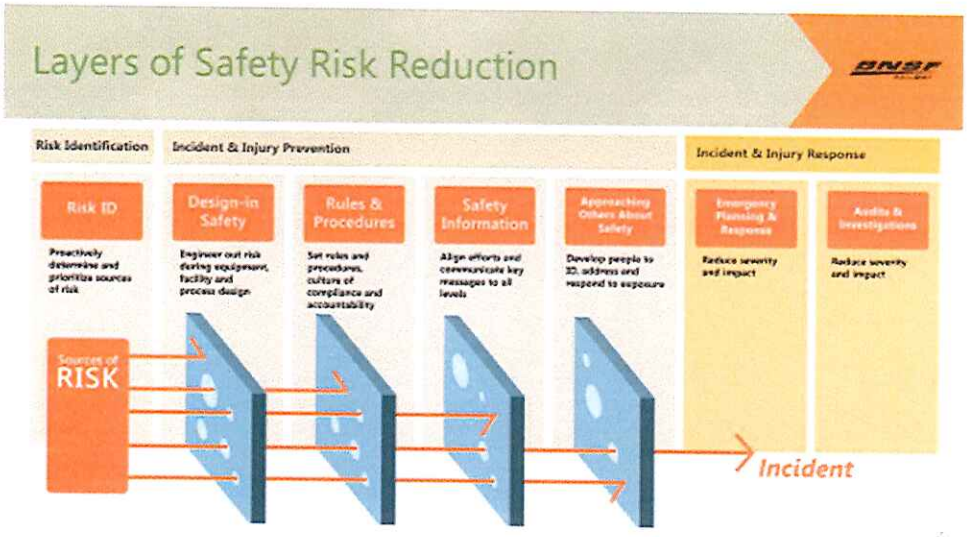
DOCKET NO. N2015.11.84

BNSF RAILROAD COMPANY COMMENTS IN THE MATTER OF THE MONTANA PUBLIC SERVICE COMMISSION'S INVESTIGATION INTO RAILROAD SAFETY

BNSF Railway Company respectfully submits the following information in response to the December 8, 2015 Notice of Roundtable and Request for Comments in Docket No. N2015.11.84. Our response provides an overview of BNSF's rail safety programs, as well as our engagement with federal, state and local entities. We ask the Commission to consider these comments as you examine potential additional state rail safety initiatives.

Rail Safety Risk Assessment

As detailed below, BNSF begins everything we do with an assessment of risk and a multi-layered system to reduce risk for our employees and the communities we serve. If the Commission determines that it will conduct a rail safety risk assessment, BNSF respectfully requests an opportunity to participate in the assessment and to provide additional information regarding ongoing efforts to improve safety.



About BNSF

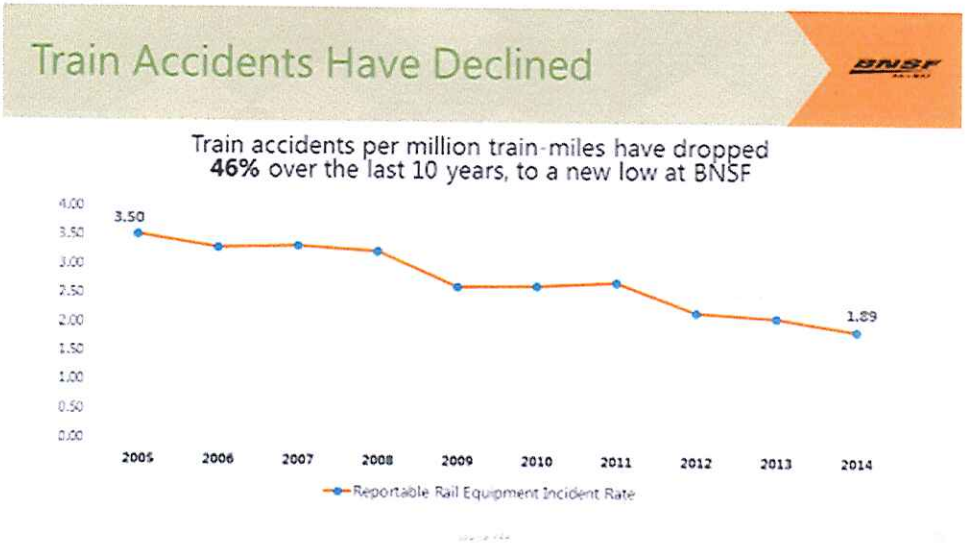
BNSF Railway has 32,500 route-miles of track in 28 states and also operates in three Canadian provinces. We employ approximately 47,000 employees who operate about 1,500 freight trains per day. Across our network, we move one-fourth of the nation's rail freight.

BNSF's Safety Vision

Safety is the primary consideration in everything we do at BNSF. As a leader in railroad safety, we recognize that a safe and secure railroad network is essential to our nation's future and important to the more than five thousand communities that we serve. Our approach to safety starts with the belief that every accident is preventable. We have a broad-based risk-reduction program for all traffic to ensure that shipments are handled safely.

Operating free of accidents and injuries has long been part of BNSF's vision; our focus has been on preventing accidents in the first place. The rail industry as a whole is also very safe and has reduced employee injury rates, train accident rates and grade-crossing collision rates by 80 percent or more since 1980. In 2014, BNSF achieved the best-ever safety results and has shown continuous improvement in safety over the past decade with all types of accidents declining 40 percent or more since 2005.

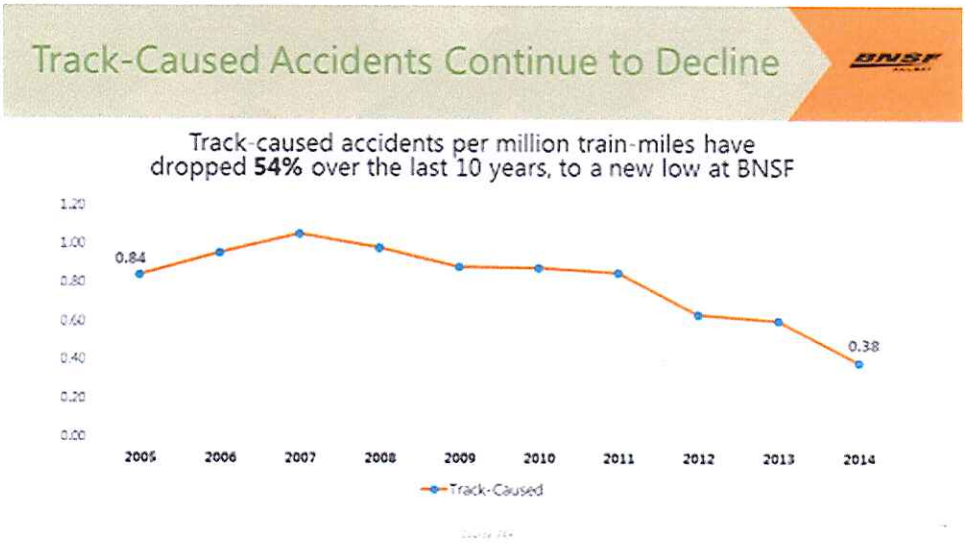
Investment in rail infrastructure, development of a Safety Culture of Commitment by all BNSF employees, and technology are all critical elements of our approach to overall risk reduction.



BNSF's Risk Reduction Program

BNSF has a broad-based, multi-level risk reduction program to reduce incident risk on our railroad. This multi-layered risk reduction program is designed to ensure that all commodities are handled in a safe and damage-free manner.

Record Capital Investments – Investment in the rail network is key to reducing risk and preventing accidents. Record capital investments are being made in the railroad to help create a safer and more reliable physical plant. During the last three years BNSF has invested more than $450 million to maintain and expand our rail network in Montana. BNSF's more than $50 billion in capital investments since 2000 has made our entire railroad network as reliable and durable as possible. Our capital expenditures include strategic investments in expanding track, yards, and terminals; renewing track; developing technology; and purchasing new locomotives. In 2015 alone, BNSF invested $6 billion in support of its rail maintenance and expansion programs. Nearly 50 percent of our 2015 capital plan was spent on replacing and maintaining existing infrastructure: things like replacing and upgrading rails, ties and ballast and maintaining bridges. These substantial investments reflect our Company's strong and long-term commitment to a safe and reliable rail network.



Employee Training and Compliance – BNSF's employees share our safety vision and are provided detailed technical and rules training to help achieve that vision. BNSF uses a robust compliance oversight process, including both direct and remote operations testing, to monitor rules compliance.

Approaching Others About Safety is our largest employee safety program ever and is creating fundamental improvements in our safety culture. In thousands of conversations every day, employees are looking for ways to minimize risk and eliminate injuries for themselves and their work teams. We initiated the program three years ago, and today employees have embraced Approaching Others as integral to the way we operate the railroad. Each individual comes to work willing and empowered to approach any co-worker to recognize safe and unsafe behaviors.

The Safety Culture of Commitment at BNSF has contributed to a 40% decline in human factor-caused accidents during the last ten years and employee injury rates have declined more than 45%.

Track Infrastructure Defect Inspections – BNSF has 44 full-time track inspectors working in Montana. BNSF inspects track and bridges more frequently than required by the Federal Railroad Administration to help ensure they are safe. These inspections include routine visual inspections by track inspectors and inspections with specially equipped rail cars that use ultrasonic and other advanced technology to look for flaws in the rail and to test track geometry.

Track Inspection Programs

- Most key routes on BNSF are inspected four times per week, and for shale crude it is 2.5 times the inspection frequency required by the Federal Railroad Administration.
- BNSF's busiest main lines are inspected daily.
- Track inspections on BNSF main lines occur by hy-rail vehicle. In addition to the normal hy-rail inspections, on-foot inspections of all turn-outs on the main lines and yard tracks are required at least monthly. Supervisors are also required to make regular train rides over their assigned territories.
- Track inspectors record track conditions and update data following each inspection. The FRA has access to this data.

Bridge Inspections

- Inspections of all bridge structures are performed twice per year and are utilized to identify required maintenance and to ensure there are no major structural deficiencies. One of those inspections is also performed with the presence of a supervisor. Currently BNSF has 5 bridge inspectors covering Montana and will have 6 by the end of January.
- BNSF's bridge inspectors and engineering staff are also supported by consultants and contractors in our efforts to inspect and maintain BNSF bridges.
- Bridges that are identified as top candidates for major work or replacement as a result of those undergo an additional special inspection by a structural engineer.
- The key to the longevity of any structure is proper maintenance and repair. And railroads, such as BNSF, spend a higher percentage of revenue maintaining, replacing, and expanding its infrastructure than any other industry.

Rail Defect Inspections

- BNSF's track inspection program also utilizes state-of-the-art technology to help identify defects or problem areas that cannot be detected by the human eye.
- BNSF has made significant investments in inspection and detection technology to enhance the regular manual inspection process.

Rail Detectors

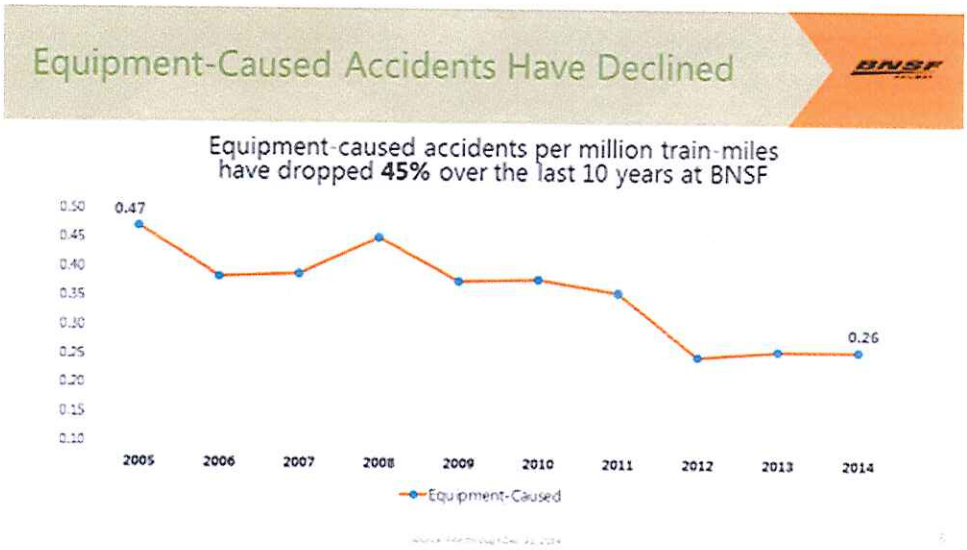
- BNSF's rail detectors use ultra-sonic rays to detect internal (and external) flaws in the rail. The frequency of inspections are determined by the tonnage moved over a given section of track, however, the main line routes across BNSF's system receive rail detector testing every 30 to 50 days on average.

Track Geometry Car

- BNSF's track geometry car measures major main line routes approximately three times a year. The track geometry car is a specially-equipped passenger car that measures the tracks' surface under load for gauge, cross-level, alignment and vertical acceleration. A computerized print out of the trackage indicates where the measured flaws exist in the track. This information is immediately communicated to field personnel to ensure that the defects are addressed.

Equipment Defect Inspections – BNSF has an extensive network of detectors on our rail lines that monitor each passing railcar for stresses on the wheels or other components to help prevent equipment failures before they occur.

- Wheel Impact Load Detector - Measures forces applied to the rail to evaluate wheel surface defects. Decreasing the number of high impact wheels can help prevent derailments and also extend the useful life of rail.
- Warm Bearing Detection System - Monitors for excess heat coming from wheel bearings. Identifying internal bearing defects early prevents potential derailments and helps extend wheel life.
- Hot / Cold Wheel Detector & Technology Drive Train Inspection - Measures wheel tread temperature to identify sticking or inoperative brakes; and applied handbrakes.
- Acoustic Bearing Detector - Utilizes a microphone array to evaluate and identify internal journal bearing flaws.
- Machine Vision System - Utilizes a camera system to evaluate and identify component wear or damage of wheels, brakes, and draft gear and truck components. The early warning this technology provides enables BNSF to repair trucks before safety issues occur.
- Truck Performance Detector - Measures forces applied to the rail to evaluate each truck's ride performance. Early warning of truck performance issues enable BNSF to perform repairs before safety issues occur and extends the life of the equipment.



Partnering with Our Communities

BNSF works closely with state and local leaders and emergency responders across our network to ensure that communities understand how railroads operate and are prepared in the event of an accident.

- **Routing.** As a common carrier, railroads are required by law to transport hazardous materials. Railroads use a sophisticated statistical routing tool designed to determine rail routes that pose the least overall safety and security risk for the transportation of certain hazardous materials. This tool, developed by the Federal Railroad Administration (FRA), the Pipeline and Hazardous Materials Safety Administration (PHMSA), the Transportation Security Administration (TSA) and the Federal Emergency Management Agency (FEMA) uses 27 risk factors — including hazmat volume, trip length, population density along the route, and emergency response capability to assess the safety and security of rail routes.
- **Information Sharing.** BNSF utilizes four important methods for communication of hazardous material information to local and state responders:
    - **Train Lists -** for every train that is transporting a hazardous material BNSF train crews will have a train list that provides the location of the hazardous materials in the train, the DOT hazardous materials description of those materials and emergency response information. During an emergency, BNSF train crews will make this document available to first responders.
    - **ASKRAIL -** The AskRail app is a safety tool that provides first responders immediate access to accurate, timely data about what type of hazardous materials a railcar is carrying so they can make an informed decision about how

to respond to a rail emergency. AskRail is a backup resource if information from the train conductor or train consist is not available. First responders can request this app through www.bnsf.com

- **Hazmat Traffic Flows -** BNSF provides local authorities, upon request, with a list of the hazardous materials, including crude oil, transported through their communities. Railroads also equip train dispatchers and crews with information about hazmat on individual trains and detailed emergency response information specific to those materials.

- **SECURETRAK -** Is a BNSF program that has been offered to the Montana Fusion Center that provides a graphical display near real time location of all trains in Montana that contain hazardous materials with the ability to obtain a list of the type and sequence of the hazardous materials in a train.

- **Emergency Response Training.** Each year, thousands of emergency responders and railroad and shipper employees receive specialized training through individual railroad efforts and industry programs. The Security and Emergency Response Training Center (SERTC) at the AAR's Transportation Technology Center has trained more than 50,000 transportation, emergency response, chemical, government agency and emergency response employees and contractors from all over the world to safely handle accidents involving tank cars carrying hazardous materials. Railroads also support industry partnership such as TRANSCAER® (Transportation Community Awareness and Emergency Response). TRANSCAER® is a voluntary national outreach effort that focuses on assisting communities to prepare for and respond to a possible hazardous material transportation incident. Another program is Chemtrec (Chemical Transportation Emergency Center). Chemtrec is a 24/7 resource for emergency responders that provides access to critical resources, such as chemical product, medical and toxicology experts, to assist in mitigation of incidents involving hazardous materials. Railroads train more than 20,000 emergency responders each year through their own efforts and through industry partnerships. In 2015, BNSF Railway has provided Railroad Hazardous Material Emergency Response Training to over 10,250 First Responders from communities throughout the BNSF network.

    - In the last 5 years, BNSF has provided emergency response and safety training to more than 725 Montana first responders from communities including Whitefish, Glendive, Baker, Forsyth, Miles City, Glasgow, Shelby, Great Falls, Cut Bank, East Glacier, Browning, Havre, Helena, Missoula, Laurel, Libby, Culbertson, Wolf Point, Malta, Sand Coulee, and Billings.

    - BNSF has met and discussed emergency response and safety procedures with local fire, police chiefs and community members as well as various agencies and community groups including Whitefish, Great Falls, Billings/Laurel, Miles City,

Flathead County, the Montana State Emergency Response Commission, Montana Department of Environmental Quality, the Confederated Salish & Kootenai Tribes, the Great Northern Environmental Stewardship Area (GNESA), the Flathead Basin Commission, Glacier National Park, and the United States Forest Service.

- In 2015, BNSF sponsored and/or participated in various spill exercises/boom deployments including exercises on Montana's Missouri, Yellowstone and Flathead Rivers, a three day equipment drill and table top exercise with the Montana Department of Environmental Quality, National Park Service, US Forest Service, and Flathead County DES and a two day equipment drill and table top exercise with FEMA, the Blackfeet Tribe, National Park Service, US Forest Service, US EPA and MT DES.

- **Community Response Planning.** Railroads actively participate in state emergency planning committees and state agency conferences on emergency response. They also help communities develop and evaluate their own emergency response plans. These activities include representatives from local fire and health departments, education institutions, industry organizations, transportation departments and the public.

    - BNSF and Montana Rail Link have developed and updated Geographic Response Plans to support emergency response in key Montana watersheds including the Flathead River Basin, the Kootenai River, the Yellowstone River, and Clark Fork River. These plans are developed in conjunction with key stakeholders including, where applicable, the Montana Department of Transportation, the Montana Department of Fish, Wildlife & Parks, Glacier National Park, and the United States Forest Service.

- **Equipment Availability and Staging.** Railroads invest in equipment – including foam trailers – used to train emergency response personnel and respond to accidents involving hazardous materials. This equipment is strategically located at 60 locations throughout our network to ensure that it can arrive quickly at the scene of an accident.

    - Since 2013, BNSF has purchased and staged 12 spill containment trailers at key locations along BNSF's Montana rail lines. BNSF has a fleet of 27 Fire Fighting foam trailers staged throughout our network. Since 2014, BNSF has purchased and staged 2 fire trailers which are positioned in MT. BNSF also participates in various equipment sharing cooperatives including the Northern Montana Oil Spill Coop and the Montana/Wyoming Oil Spill Cooperative.

- **Accident Response and Remediation.** In the rare case of a train accident, railroads swiftly implement their emergency response plans and work closely with first responders to help minimize casualties and property damage caused by the accident. They help provide services for any misplaced families to try to limit inconvenience and

displacement. Typically, railroads reimburse local emergency response agencies for the cost of materials expended for accident response and environmental remediation.

- BNSF has more than 250 trained hazmat responders and equipment at 60 locations on our network who are supported by a network of contract emergency and environmental responders. These responders are trained and outfitted to handle the response to small non-accident releases as well as major releases. Locations in Montana include Billings, Chester, Glendive, Great Falls, Havre, Helena, and Whitefish. We have also provided a computer-based emergency response training program on hazardous materials to every fire department within 2 miles of our rail lines.

Specific Crude Oil Safety Measures Implemented by Railroads (2014 & 2015). As part of BNSF's commitment to safety, we have always handled some commodities with extra precautions to further reduce risk. For more than two decades BNSF and the rail industry have operated specially identified "Key Trains," which carry certain hazardous materials, with more restrictive operating procedures than required by federal regulation. Key Train operating procedures and practices are ingrained into BNSF's day-to-day operations, and include lower speed limits (50 mph unless further restricted by lower speed limits on the track) and stricter rules for trackside warning device notifications and emergency brake applications.

On August 2, 2013 the FRA issued an Emergency Order and Safety Advisory regarding the movements of flammable liquids, which includes crude oil and ethanol. In addition to the measures called for in the Advisory, BNSF and the rail industry implemented a number of additional voluntary measures to reduce risk. Some of these voluntary measures were implemented in cooperation with the federal government and others were implemented as an industry or, in some cases, solely by BNSF to provide an additional layer of review to reinforce existing safety rules

Increased Track Inspections

- At least one additional internal rail inspection each year above Federal Railroad Administration (FRA) requirements on crude oil routes **Effective: March 25, 2014**
- At least two Geometry Car inspections each year on crude oil routes **Effective: March 25, 2014**
- **BNSF-SPECIFIC ACTION:** increasing rail detection testing frequencies along critical waterways (BNSF currently at 2x FRA frequency; going to 2.5x with this change) **Effective: April 1, 2015**

Increased Trackside Safety Technology

- Additional Hot Bearing Detectors (HBD) on crude oil routes (max 40 mile spacing) **Effective: July 1, 2014**
- **BNSF-SPECIFIC ACTION:** HBD spacing of 10 miles on crude routes that parallel critical waterways

- **BNSF-SPECIFIC ACTION:** Key Train stopped by HBD must set-out the indicated car
- **BNSF-SPECIFIC ACTION:** KEY trains with Level II Wheel Impact Load Detector (WILD) defect (120 – 140 Kilopound (Kips)) will be handled as a LEVEL I defect (immediate set-out). **Effective: March 25, 2015**

Rail Risk-Based Traffic Routing Technology

Use of Rail Corridor Risk Management System (RCRMS) to determine the most safe and secure routes for crude trains of 20 or more loaded cars **Effective: July 1, 2014**

Lower Speeds

- Implemented nationwide speed restriction: 50 mph for all Key Trains (20 or more cars hazmat; one car Toxic Inhalation Hazard/Poisonous Inhalation Hazard (TIH/PIH)) **Effective: July 1, 2014**
- Municipal speed restriction: 40 mph for crude oil trains with Department of Transportation (DOT-111) tank cars moving through High Threat Urban Areas (HTUA) **Effective: July 1, 2014**
- **BNSF-SPECIFIC ACTION:** 35 mph for all shale crude oil trains through municipalities of 100k or larger **Effective: March 25, 2015**

Key Train Operating Practice Restrictions

- During a 'train meet' a Key Train will hold the main track whenever practicable
- A Key Train experiencing an Emergency Brake application requires inspection of the entire train before proceeding

Unattended Trains

- Crude oil trains left unattended require specific job safety briefing between train crew and train dispatcher
- Locomotive Cab Securement: Key Trains left unattended have reverser removed and cab doors locked

Blocked Railroad Crossings and Crossing Safety. Trains operate 24 hours a day, seven days a week, making it hard to predict when one will be traveling through a certain crossing. We try to limit the amount of time any crossing is blocked on a mainline track. Our customers depend on our service being reliable, affordable and timely which means keeping our trains moving. Unfortunately trains sometimes experience conditions that force them to stop. Those conditions may be related to equipment, track or weather conditions. In those cases, BNSF works to correct the condition and to resume the safe movement of trains.

In recent years, BNSF has invested an average of $95 million annually on grade-crossing maintenance, improvements and safety programs. Our initiatives include community education

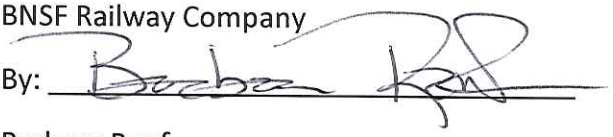
and awareness, train crew education and testing, crossing closures, new safety technology, vegetation control, and track and signal inspection and maintenance.

Our capital expenditures include strategic investments in expanding track, yards, and terminals. These investments have significantly improved operations and fluidity on the BNSF network. The addition of 200 miles of double track on the network, new sidings, and extended sidings reduce the number of times and the duration that trains must stop at crossings. As of December 18, 2015, train velocity on the network was 30% better than the December 2014 average, and the number of trains held was down 70% from December 2014. Recently completed expansion projects include:

- 55 miles of double track between Glasgow, MT and Minot, ND
- New sidings at Terry, Big Horn and Yellowstone (Forsyth subdivision)
- Extended sidings at Hodges and Beaver Hill (Dickinson subdivision); Rosebud, Blatchford, and Hysham (Forsyth subdivision)
- Yard track expansions at Glendive and Forsyth

Dated this 12th day of January 2016

BNSF Railway Company

By: 

Barbara Ranf

Executive Director State Government Affairs

BNSF Railway Company