

A GN-MILW-NP comparison

Each railroad's legacy in 2016

Some people are into history. With regard to railroads, I prefer legacy, which can be defined as something “handed down from the past; as from an ancestor or predecessor.”

With the exception of railroads such as parts of Union Pacific and Canadian Pacific, most of the railroads in existence today are the product of a merger or “spinoff” from a sale or lease (regional or shortline). Therefore, it’s increasingly unlikely that any piece of track today belongs to the original builder of that line. Still, some members of historical societies regard operations today to have no relationship whatsoever to predecessor railroads (until, of course, there’s a rare mileage train trip they can ride!). I wholeheartedly disagree with this point of view, mostly because a present-day reference is the best way to foster interest in younger people. After all, unless it is a major main line that was built in the past 46 years (only the Wyoming coal line of the late 1970s comes to mind), all rail lines today are in place primarily due to the parameters in place at the time of their original construction, and their subsequent worthiness is indicated by if these routes are in use today and to the degree they’re still used. After all, history is in the past and finite. Legacy is ongoing, and potentially infinite.

That much of today’s railroading continues to be based on the decisions made 100+ years ago, and how much is still operated and how is a great way to compare how railroads and individual routes within have “stood the test of time”; i.e., their legacy.

What follows is a summary of how former GN, MILW, and NP lines are used today and the extent of their use in early 2016, along with comparison of alternate routes (where applicable).

When comparing the Great Northern, the Milwaukee Road (west of the Twin Cities), and Northern Pacific, the most obvious place to start is the “transcontinental” routes between the Twin Cities and Seattle, which was the primary route for each (and purpose for their creation). With a bit over 82 percent of the route miles, BNSF’s “Northern Transcontinental” route today is mostly former Great Northern trackage (and it’s no wonder that the route is also referred to as and marketed as the “Great Northern Corridor”). (Just over 17 percent of BNSF’s transcontinental main line is ex-NP. All the the “Northern Transcontinental” route is either ex-GN or ex-NP, mostly because the Milwaukee Road was not part of the 1970 BN merger.)

Synopsis of the BNSF “Northern Transcontinental” route between St. Paul and Seattle:

Main Line St. Paul to Casselton, ND, 272 miles, largely ex-NP.

From St. Paul to just west of Casselton, ND (some 272 miles) is former Northern Pacific trackage, except for Minneapolis (University) to Sauk Rapids, which was pre-merger joint GN and NP track (GN predecessor St. Paul and Pacific was first to build on the route, however). While the Twin Cities of St. Paul and Minneapolis are but 11 rail miles apart, the elevation in Minneapolis is nearly 100 feet higher. Great Northern (courtesy of predecessor St. Paul and Pacific) had the shortest route between the two cities. This direct route was not only used by GN passenger trains, but also those of the CB&Q, Chicago and North Western, St. Paul, Minneapolis, and Omaha and the NP as all of these railroads used the Great Northern Railway passenger station in Minneapolis. But, it had a nasty 1.6 percent westward grade departing St.

Paul. As the NP didn't need its main line to access downtown Minneapolis directly (as its passenger trains used the GN) it was able to build on a slightly longer route to the north with a better grade (1 percent is ruling grade with a short grade over 1 percent). This is the primary reason that the NP route across Minnesota is BNSF's Northern Transcontinental route today as well as other factors:

1. The NP line between St. Paul and Northtown did not allow immediate access to GN's line to Willmar in Minneapolis;
2. Using the joint GN-NP route out of Minneapolis allows main line access to Northtown Yard, which Burlington Northern created as its major Twin Cities terminal yard, and
3. Using the joint GN-NP route out of Minneapolis allows direct access to Coon Creek Jct., the junction to GN's route to Superior, WI; this would be Burlington Northern's primary route between Minneapolis/St. Paul and Duluth/Superior (eventually resulting in the NP line being mostly abandoned).
4. This route ties into the ex-NP line from the Twin Ports at Staples; initially a route for grain, but today almost exclusively a route for coal trains.
5. The route is largely double track, even beyond the paired GN/NP track between the Twin Cities terminal and Sauk Rapids. This was obviously in preparation of the pending merger (in 1970).

The "Northern Transcontinental" Route between the Twin Cities and Casselton is a high-tonnage and low horsepower route, due to ruling grade being .5 percent or less. The route features, from an operating standpoint, the greatest engineering accomplishment made by the Northern Pacific, the Stockwood Fill, which allows eastward trains from Dilworth to depart the Red River Valley on a .3 percent grade rather than nearly .8 percent that was in place previously. This allows minimally-powered trains to handle an impressive amount of tonnage. For instance, a 17,000-ton coal train can run to destination (Superior or St. Paul) with only two SD70ACE locomotives (or equivalent) if necessary.

Main Line Casselton, ND to Sandpoint, ID, 1087 miles, ex-GN:

Between Casselton, ND (actually Surrey Line Jct.) and Sandpoint, ID, the preferred "Northern Transcontinental" route is all former Great Northern trackage. Between Fargo (Moorhead) and Minot (Surrey), BNSF uses the ex-GN route via Grand Forks and Devils Lake as an alternate main line, effectively creating a double track route (both lines are mostly single track CTC with sidings). The route(s) from eastern North Dakota all the way to Havre, Montana (half way across the state) feature exceptionally light grades: .65 percent is the maximum westward and .6 percent eastward, with the vast majority of the route miles at a .4 percent grade or less. The line is perfect for moving huge amounts of tonnage with minimal power. Indeed, while rare, two AC locomotives (ES44 or SD70MAC) can handle shuttle unit grain trains (about 16,000 tons) from the Dakotas and Minnesota to Havre. The route is fast with (as is the case east of Casselton) most of the line good for 70 MPH running for intermodal trains.

West of Havre, the "Northern Transcontinental" encounters its first 1 percent grade other than between St. Paul and Minneapolis, some 910 miles west of Minneapolis. A line change in 1967 between Glacier Park Station and Summit created a very short section of 1.3 percent grade, but other than that, this is the ruling grade between Havre and the Continental Divide at Summit (Marias Pass). Beyond Summit to Sandpoint, the maximum westward grade is 1 percent, which the climb from Brimstone to Twin Meadows approaching Flathead Tunnel. (The line change associated with Libby Dam and Flathead Tunnel increased the grade between Whitefish and

Spokane westward from .6 to 1 percent). Eastward, major grades are 1 percent between Riverview and Rock Creek (west portal of Flathead Tunnel; again steeper than the GN line it replaced via Eureka), and 1.8 percent for 14 miles between Java and Summit. For this eastward grade BNSF can use helpers stationed at Whitefish (two sets of two-unit helpers are kept in place). Westward trains are not planned to be helped due to the lesser grade, though if locomotive failures occur, helpers can be dispatched east of Summit.

Capacity limitations on this segment of the route revolve around Flathead Tunnel, which did not actually open until just after the 1970 BN merger. Due to needing a minimal tunnel flush (the tunnel is the second longest railroad tunnel in the United States at just over 7 miles), train capacity is limited to about 50 trains per day.

But the operational advantages in this section of the “Northern Transcontinental” so overshadow the disadvantages or those of the ex-NP or ex-MILW. For westward trains, the gentle gradient allows trains to crest the Continental Divide with not only a lesser amount of power, but allows bigger trains and/or trains that would not require helper power (or distributed power) to be cut into the train. Power is on the head end of the train or the rear only. For trains not operating with distributed power, the trailing tonnage limitation for westward trains via Marias Pass is 10,800 tons, nearly double that allowed on Montana Rail Link (ex-NP) west of Helena.

The Great Northern’s painstaking effort to crest the Continental Divide westward at a 1 percent grade (which was increased to 1.3 percent in 1967) paid very big dividends in 2009 when the ex-NP Mullan Tunnel collapsed on Montana Rail Link. For about a month, nearly all of the traffic that was routed via MRL was routed over Marias Pass. The ability for the ex-GN Marias Pass route to accommodate this traffic was aided by a decline in traffic due to “the Great Recession” of 2008, but the amount of traffic handled was still remarkable. One day, 15 “heavy” (unit trains of grain and coal, 15,000 to 18,000 tons) were operated west of Shelby along with the other traffic. Of all the routes over the Continental Divide on the former GN, MILW, and NP, this would only be possible westward on Marias Pass as no helpers were needed. In fact, during the entire month of detouring trains, BNSF did not supplement its helper power at Whitefish.

Operating via the ex-NP route across Montana (MRL), coal trains (up to nearly 18,000 tons for 125 cars) add helper power to the rear at Livingston for Bozeman Pass and cut in helper power at Helena. For these heaviest coal trains, they usually would arrive Helena with four AC locomotives (SD70AC or equivalent) in a 3X1 DP configuration. At Helena, a set of four more AC locomotives are added midtrain and after cresting the Continental Divide at Blossburg, the helper power is cut out at Elliston and returned to Helena for the next help. Unless there is unlimited helper power (which should never be the case), any helper scenario limits the number of trains that can be operated as this number is the amount of time to cut into the train, the amount of time to get to where the power is cut out, the time to cut the power out, and the time to return to the location for the next help. In the case of these detouring trains via Marias Pass, the 4 AC locomotives provided was sufficient to run the train to destination without adding any additional power; hence the ability for Marias Pass to handle the additional “heavies” westbound without dramatically affecting capacity. Eastbound over Marias Pass, the additional traffic could be handled without incident as BNSF predecessor Great Northern ameliorated the negative aspects of the 1.8 ascending grade by doubletracking the entire railroad on the grade, unlike its NP and Milwaukee Road counterparts, and additionally, unlike crossings of Mullan, Pipestone, and Bozeman Passes, Marias Pass does not have a tunnel at the crest.

Main Line Sandpoint, ID to Spokane, 68 miles, ex-NP:

For the short segment between Sandpoint and Spokane, BNSF's "Northern Transcontinental" uses the former Northern Pacific rather than the ex-GN route through Newport. This route is shorter by about 6 miles, and featured no grade crossings in downtown Spokane as the entire right of way is elevated. Another major consideration would be a planned major yard at Hauser, Idaho (not counting the Libby Dam line change would be exactly 500 miles from Havre, Montana – a major consideration back in the days when federally-mandated train inspections had to be done every 500 miles) which was actually not constructed until after the BNSF merger. Significant line changes (and bridge work) were needed at Sandpoint and Spokane to allow trains to access the NP route at these locations off the GN routes that would be used on either side of the Sandpoint-Spokane segment.

Main Line Spokane to Seattle, 329 miles, ex-GN:

The "Northern Transcontinental" route leaving Spokane includes some new (after the BN merger) trackage, but for the most part, the route is entirely the former Great Northern main line across Washington State. Between Wenatchee and Everett, the line is restricted to about 25 trains per day owing to a tunnel flush (much longer for eastbounds as they are running uphill) through Cascade Tunnel (at 7.79 miles, the longest railroad tunnel in the United States). The primary advantage of the ex-GN route compared the ex-NP route is that the GN route is 67 miles shorter between Spokane and Seattle, and has much less curvature, giving the ex-GN route a large advantage in running time, which improves locomotive and car cycle time. The ex-GN route between Spokane and Seattle also passes through Everett, which is junction to another main line in the area, the ex-GN route to Vancouver, BC. Trains using this route to and from the points east of Spokane can avoid the Seattle metro area, which would not be possible on the ex-NP route over Stampede Pass. Today, the "Northern Transcontinental" route east of Everett hosts many empty coal and crude oil trains from the Bellingham subdivision (toward Vancouver, BC) rather than routing them through the Seattle terminal and then over Stampede Pass.

Both the ex-GN and ex-NP routes have maximum grades through the Cascade Mountains of 2.2 percent in each direction, so there is no specific locomotive "savings" using either route. With regard to a helper/distributed power scenario, the ex-NP route would allow the number of locomotives needed to crest the grade to be used for a lesser amount of time than the current "Northern Transcontinental" route, which would somewhat offset by longer running time for the road power overall.

Synopsis of routes not chosen as part of the BNSF "Northern Transcontinental" route between St. Paul and Seattle:

Alternate route between St. Paul and Casselton, ex-GN:

The ex-GN main line between St. Paul and Casselton (via Willmar and Breckenridge), while not usually used for "Northern Transcontinental" trains is still very much in use. Between St. Paul and Minneapolis, it is the route for intermodal trains accessing BNSF's Midway Intermodal hub. It should be noted that that GN's 1.6 percent westward grade between St. Paul and Minneapolis was not a hindrance overall to Great Northern's operation because most of the traffic received in interchange from the east arrived via the CB&Q, which was responsible for delivering the traffic to GN's Union Yard in Minneapolis. When the tonnage was exceptionally heavy, or would

interfere with passenger traffic, CB&Q transfers would actually use the NP route and its lesser grade, then enter Union Yard via the “Union Connector.” Such movements happen even today when a westward train destined for Willmar or beyond is insufficiently powered to operate on BNSF’s Midway subdivision (ex-GN route through the Twin Cities) and instead uses the St. Paul subdivision (ex-NP route) to the connector.

Between Minneapolis and Willmar, former GN main is primarily a north-south route handling trains operating south from Willmar toward Sioux City, Lincoln, Omaha, and Kansas City. It also handles coal trains from the Powder River Basin routed via Lincoln, NE, and grain trains from South Dakota and Minnesota destined to the Twin Cities and Chicago interchange. Between Willmar and Breckenridge/Wahpeton, the route is primarily grain trains and their corresponding empties trains to and from points South Dakota and Minnesota entering and leaving at Willmar, Benson, and Morris. Between Wahpeton and Casselton, the route is operated by short line Red River Valley and Western; BNSF operates trains between Casselton and Wahpeton via Wolverton, on the ex-GN primary passenger route between Minneapolis and Fargo.

Grades on this alternate route between Minneapolis and Casselton and comparable with the “Northern Transcontinental” route: .5 percent or less; quite minimal, and mileage is just about identical.

Alternate route between Casselton and Sandpoint, ex-NP:

Unlike on the “Northern Transcontinental” route where westward trains experience their first 1 percent grade some 625 miles west of Casselton (west of Havre), those on the ex-NP main tackle their first such grade only about 27 miles west of Casselton climbing to appropriately-named Peak, ND. West of Peak - nearly all the way to Glendive, Montana – westward 1 percent grades are frequent. While not as numerous eastward from Glendive to Casselton, trains are powered for 1 percent (versus .6 percent crossing North Dakota on the “Northern Transcontinental”) not only due to the Badlands of Western North Dakota, but also ascending from the James River Valley at Jamestown.

Standard shuttle grain trains on BNSF weigh about 16,000 tons with around 110 cars. In the Dakotas, these trains are assigned three units (the generic C44 or equivalent) to move to destination, with power being added downline as needed. On the “Northern Transcontinental” these three units can easily handle this train to Havre in any power configuration (not distributed power/all power on head end, for instance). In instances where power is demand is great, two AC locomotives can be used. On the ex-NP route, the three units must be operated in a 2-by-1 distributed power configuration. Less than three units or all three units on the head end of the train would be insufficient power to tackle the grades.

Between Glendive and Livingston, grades on the former NP route are slight: steady .5 percent westward and downhill eastward, as the route follows the Yellowstone River. West of Garrison, it’s much the same: the route follows the Clark Fork River the entire distance with westward being largely downhill, and with ruling grades in both directions less than 1 percent. (Between DeSmet and Paradise, the original NP main line over Evaro Hill is still in service. It is used mostly by empties trains due to the 2.2 percent grade in each direction).

The section between Livingston and Garrison is the primary operating challenge on the former Northern Pacific main line consisting of two helper districts (Livingston to Bozeman and Helena to Elliston) and one very lengthy hill which is not a helper district (Winston Hill, Townsend to Helena).

Livingston to Bozeman, or Bozeman Pass is about 13 miles of 1.8 percent grade westward and 7 miles of 1.9 percent grade eastward. The line is single track, but does have two sidings (Muir and West End) on opposite sides of the crest of the grade. There is a tunnel atop the pass, about 3,000 feet in length, just to the east of the crest. Helpers are used for most trains here and most add power to the rear. Helper power is cut at Bozeman westward and Livingston eastward – not West End or Muir – due to the grade.

Unlike between Logan and Toston where the ex-NP main line hugs the Missouri River (but never crosses it) to maintain a water level grade, but features curves (near Lombard) of 10-12 degrees, the line between Townsend and East Helena leaves the immediate Missouri River valley and climbs 13 miles westward and 10 miles eastward on what is more or less a continuous 1 percent grade to “Winston Hill.” (The Missouri River, on the other hand, traverses a rather tight canyon, where Canyon Ferry Dam is located.) Since helpers are added on the parts of the route where the 1 percent grade is exceeded, this constitutes the ruling grade along with the Casselton-to-Glendive segment. The elevation of Townsend is 3,822 feet, and East Helena is 3,892 feet – meaning only 70 feet of difference in 29 miles of rail line. But between these two locations, each train climbs to 4,355 feet only to descend back to the same elevation in the same watershed.

Mullan Pass, between Helena and Elliston is the primary operational challenge on the former NP main line, but this is only because its westward profile. Eastward, considering the crossing of the Continental Divide only, it is superior to the “Northern Transcontinental” route in that the ruling grade is only 1.4 percent for about 8 miles (versus 14 miles at 1.8 percent for Marias Pass, though Marias Pass does have 2 main tracks compared to one over Mullan Pass), and also better than the Milwaukee Road’s 1.66 percent climb east of Butte over Pipestone Pass. Westward from Helena features 4 miles of track with grades between 1 and 2 percent and 11 miles of 2.2 percent grade, much curvature (to 10 degrees) and cresting the grade through a tunnel about two-thirds of a mile in length. The profile of this part of the route dictates trailing tonnage restrictions for single trains and therefore helpers for most others, many of which need helper power placed midtrain, which is exceptionally time consuming. Whereas BNSF stations four helper units at Whitefish (Essex) for Marias Pass and its doubletrack eastward grade, MRL needs to keep a dozen or more units at Helena to maintain fluidity on this single track helper district. As with any helper situation, the primary costs are helper crews, and locomotive utilization, broken down into Locomotive Dwell (a fixed amount of power that needs to be stationed at a location whether it has an immediate task to perform or not), Train Delay (delaying trains as a finite number of helper consists is available), and Locomotive Maintenance (the cost of keeping the power usable for service, with an added challenge for locomotives nearly exclusively used for helper service; i.e. constantly under maximum load pulling steep grades).

Finally, it should be noted that the “Northern Transcontinental” route between Casselton and Sandpoint is 91 miles shorter than the ex-NP route between the same two points.

The cumulative combination of all the shortcomings of the ex-NP route cannot be overstated when it comes to route selection in desiring the low-cost route. For example, in 2006, BNSF conducted a maintenance of way “blitz” on its Milk River Subdivision (on the “Northern

Transcontinental” route between Havre and Glasgow) which resulted in large number of track gangs working simultaneously. To reduce traffic on the route and allow more time for the track work, BNSF detoured a number of shuttle grain trains via the former NP route through Montana that would have normally operated via the “Northern Transcontinental” route. For a six week period, 89 such trains were operated between Casselton and Sandpoint; 45 via their regular route through Havre; 44 via Glendive, Laurel, and Helena. In spite of those operating via Havre sustaining delay due to the increased maintenance of way presence west of Glasgow, these trains averaged 23 hours, 55 minutes faster than via the detour route through Laurel. Such is the result of increasing traffic on a route with an intense up-and-down profile (though North Dakota) and being spaced to receive helper power at two locations (Livingston and Helena) in addition to the increased running time associated with more traffic overall. The example explains why BNSF will often take shuttle grain trains loaded at Eldridge (west of Jamestown), Jamestown, or Berea (Valley City) – all on the ex-NP main west of Casselton – and run them first east to Casselton or Dilworth and reverse direction and operate via the “Northern Transcontinental” or via Grand Forks and Devils Lake, and then west to destination, rather than running the trains west on the former NP main. Fewer crews, fewer locomotives, and faster cycle time make the “Northern Transcontinental” the lower-cost option.

Alternate route between Sandpoint and Spokane, ex-GN:

The ex-GN route between Sandpoint and Spokane was only 6 miles longer than the “Northern Transcontinental” route. It spanned the Pend Oreille River east of Newport Washington on a span less than one-quarter the length of the span used by the “Northern Transcontinental” route over Lake Pend Oreille at Sandpoint. Today, the ex-GN main line is operated by short line Pend Oreille Valley between Dover and Newport, and is abandoned between Newport and Mead. BNSF continues to operate the Sandpoint (Boyer)-Dover and Spokane/Hillyard-Mead segments. Grades on this segment were less than 1 percent, except eastward from Spokane to Hillyard, which was 1 percent. The ex-GN trackage from near Hillyard through downtown Spokane has been taken up and specifically, the site of the GN station in Spokane on Havermale Island was developed for the 1974 World’s Fair.

Alternate route between Spokane and Seattle, ex-NP:

Comparing specifically the ex-GN “Northern Transcontinental” and ex-NP routes only crossing the Cascades, the ex-NP route has a number of advantages. The route between Ellensburg and Auburn has only 11 miles of 2.2 percent grade eastward and 6 miles westward; the ex-GN “Northern Transcontinental” route between Wenatchee and Everett has 30 miles of either 2.2 percent grade or 1.6 percent grade (through 7.79-mile Cascade Tunnel) and 6 miles of 2.2 percent grade westward, and 11 more miles of 1.6 percent grade. If the primary component of the operation was only that of utilization of helper (or distributed) power, the ex-NP Stampede Pass route would certainly have the advantage as helper power would be confined to a 22-mile segment between Easton and Lester (between which are located the 2.2 percent grades), much shorter than 72 miles that would be necessary on the “Northern Transcontinental” route between Wenatchee and Skykomish. Today, however, BNSF uses no helpers, and runs additional power on its “Northern Transcontinental” route between Seattle (or Tacoma) and Wenatchee (and vice versa), cutting and adding power at Wenatchee as needed. The ex-NP Stampede Pass route today handles only empties trains (coal, grain, crude), and therefore an exclusively-eastward railroad (with local service between Pasco and Ellensburg).

The primary consideration for not choosing this ex-NP segment for the “Northern Transcontinental” was distance. The former GN route between Spokane and Seattle was 329 miles; the former NP line was 396 miles, or 67 miles further, with much more curvature. The ex-GN route was therefore much faster, and allowed access to the important ex-GN main line to Vancouver, BC from Everett without needing to traverse the Seattle terminal.

The Milwaukee Road between St. Paul and Seattle:

No part of the Milwaukee Road was included in the route of the “Northern Transcontinental” as it was not part one of the railroads included in the Burlington Northern merger of 1970. After the Milwaukee Road retrenched in in 1980 and 1982, Burlington Northern did acquire some of what was the Milwaukee’s transcontinental route, but did not incorporate any of it into the “Northern Transcontinental” route. A synopsis of the Milwaukee’s route and profile explains why.

The Milwaukee Road’s transcontinental route west of St. Paul today exists as follows:

1. Intact St. Paul to Minneapolis, but not all the way across the city of Minneapolis;
2. Intact from St. Louis Park area (from a junction with BNSF’s Wayzata subdivision at Cedar Lake Jct.) to Appleton, MN, operated by short line Twin Cities and Western;
3. Intact from Appleton, MN to Terry, MT operated by BNSF;
4. Abandoned from Terry, MT to Maple Valley, WA except for short segments in Miles City, MT and Butte, MT, St. Maries to Plummer, ID, Warden to Othello, WA and Othello, WA to Royal City Jct., WA operated by a variety of entities ranging from BNSF to short lines to the state.
5. Intact from Seattle to Black River to Tacoma, currently operated by UP.

Between St. Paul and Minneapolis, the grade on the Milwaukee Road was 1.2 percent westbound and 1 percent eastbound versus the GN at 1.6 percent westbound/.6 percent eastbound and NP at 1 percent westbound and eastbound.

From Minneapolis to Milbank, SD grades are slight, generally .5 percent or less.

West of Milbank, SD at Twin Brooks is the first 1 percent grade west of Minneapolis, and is located less than 200 miles from Minneapolis (versus 290 miles on the ex-NP, and 910 miles on the ex-GN). This 1 percent grade is significant: 14 continuous miles climbing out of the valley of ancient Lake Agassiz to appropriately-named Summit, South Dakota. BNSF assigns three “premium” locomotives to most loaded shuttle grain trains in the Dakotas and Minnesota, including the shuttle facility at West Milbank, near Twin Brooks, just east of the start of the grade to Summit. When these trains bill to the west coast, BNSF will not operate these trains directly west via Summit as too many stalls with these standard locomotive consists have occurred (even if operating in distributed power configuration). The trains instead operate east through Ortonville and Appleton to Benson, then north to Moorhead/Fargo to operate via the “Northern Transcontinental” where the standard consist can handle the train without incident. In the event that the “Northern Transcontinental” or ex-NP route cannot accommodate such train, a fourth unit will be assigned for the grade between Twin Brooks and Summit, and likely will be removed at Aberdeen.

From Summit to Aberdeen, grades are gentle, .5 percent or less in each direction.

Between Aberdeen and Terry, Montana (west of which the former Milwaukee Road is abandoned), the maximum grade westward is 1 percent with a ruling grade of about .8 percent. Eastward is generally .6 percent or less, except for 5 miles of 1 percent departing the valley of the Little Missouri river at Marmarth, ND. Indeed, 1 percent is the ruling grade for this segment.

Between Terry and Harlowton, the Milwaukee Road was similar to the ex-NP: River grade, though not always along a river (between Forsyth and Melstone). Maximum grades were moderate at .6 percent or less.

West of Harlowton began the many very steep grades on the Milwaukee Road's Pacific Extension:

1. The hill at Loweth, 1.4 percent westward; 1 percent eastward
 2. The Continental Divide at Pipestone Pass, 2 percent westward; 1.66 percent eastward.
 3. St. Paul Pass (Bitterroot Mountains), 1.7 percent each way
 4. Boylston (Saddle Mountains), 2.2 percent westward, 1.6 percent eastward.
 5. Snoqualmie Pass (Cascade Mountains), .7 percent westward, 1.74 percent eastward.
- All of these grades, except Loweth and westward to Snoqualmie were considered helper grades.

Here is a synopsis of the major grades (greater than 1 percent) on the GN, MILW, and NP west of Havre, Harlowton, and Livingston respectively, as well as GN-NP subsidiary SP&S (blank where not applicable):

Westward (grade, in percent);

*-tunnel at/near crest;

Alternate NP routes not on main freight route *italicized*.

	GN	MILW	NP	SP&S
Little Belt/Bridger Mountains		1.4	1.8*	
Continental Divide	1.3	2.0*	2.2*	
<i>Continental Divide-Homestake Pass</i>			2.2	
<i>Coriacan Defile-Evaro Hill</i>			2.2	
Bitterroot Mountains		1.7*		
Saddle Mountains		2.2*		
Cascade Mountains	2.2*	.7*	2.2*	<.2

Eastward (grade, in percent)

*-tunnel at/near crest;

Alternate NP routes not on main freight route *italicized*.

	GN	MILW	NP	SP&S
Little Belt/Bridger Mountains		1.0	1.9*	
Continental Divide	1.8	1.66*	1.4*	
<i>Continental Divide-Homestake Pass</i>			2.2	
<i>Coriacan Defile-Evaro Hill</i>			2.2	
Bitterroot Mountains		1.7*		
Saddle Mountains		1.6*		
Cascade Mountains	2.2*	1.74*	2.2*	<.4

Clearly, the Milwaukee has the greatest number of steep grades. Much touted by proponents of the Milwaukee Road Pacific Extension was the .7 percent westward ascent of the Cascade Mountains through Snoqualmie Pass. While this indeed superior to the 2.2 percent grades of the GN and NP at Stevens and Stampede passes respectively, the advantage is largely offset by the steep climb (each way) of the Saddle Mountains in Eastern Washington (with no comparable ascent on GN or NP), and that GN and NP had ultimately the best crossing of the Cascades via their subsidiary Spokane, Portland, and Seattle and its water-level route through the mountains along the Columbia River. GN and NP had the option of routing traffic over this route when deemed necessary. The Milwaukee, with no alternate route across Washington, had no choice but to send all traffic over its lone route, over both Snoqualmie Pass and the summit at Boylston.

When comparing each railroad's worthiness, the "transcontinental" route must of course be the first consideration because ultimately, this was each line's raison d'être. Clearly, most of Great Northern's route is today's preferred BNSF "Northern Transcontinental" route.

The "transcontinental" line is, obviously, only a singular route. All the railroads had secondary mains and branch lines to feed their main line. And in the "Northern Tier," it is for the most part former Great Northern routes that survive today and are vital rail transportation links, even irrespective of the mostly-Great Northern "Northern Transcontinental" route.

State-by-state synopsis of remaining existing routes detailing their use today and heritage:

Minnesota and Northwest Wisconsin

Milwaukee Road:

The primary remaining trackage is east of St. Paul which is CP's current main line to Chicago. West of Minneapolis (Cedar Lake Jct.) to the South Dakota border, the former Milwaukee Road main line is a combination of Twin Cities and Western trackage (to Appleton) and BNSF (part of a secondary main line from Benson, MN to Aberdeen, SD to Terry, MT. Lightly-trafficked ex-Milwaukee Road branch lines to places like Jackson and Austin, MN continue to be served by CP, but the vast majority of the Milwaukee Road branch lines in the state have been abandoned. CP's primary access to the Duluth/Superior area is via trackage rights on BNSF (largely ex-GN) from Minneapolis/St. Paul. The Milwaukee Road never had its own trackage to the Twin Ports, but rather used trackage rights on Northern Pacific. After the Burlington Northern merger, BN abandoned (and later shortlined) parts of the ex-Northern Pacific route between St. Paul and Carlton, with all through traffic being moved to the ex-Great Northern route between Minneapolis and Superior and along with it Milwaukee Road, and later CP (Soo Line) trackage rights.

Northern Pacific:

The route used the Northern Pacific through and west of the Twin Cities continues as BNSF's "Northern Transcontinental" route, but the only other ex-NP route of any significance is the secondary main line from Staples to Carlton, which is the primary route for coal traffic from Montana and Wyoming destined to the Lakehead at Superior. (Online traffic between Sauk Rapids and Dilworth and between Carlton and Staples is very light. The major shipper is a rock quarry west of Detroit Lakes.) While much ex-NP trackage continues to be used in the Duluth/Superior terminal, including the Grassy Point

drawbridge, all ex-NP routes leading to the terminal have been abandoned. The lines from the junction of routes from Staples and St. Paul at Carlton to both Superior and Duluth have been abandoned in favor of the ex-GN route between Superior and Carlton. Both NP routes had a ruling grade of 1 percent, while the GN route (in use today) was/is .4 percent. While lack of grade is important for heavy westward trains departing the Twin Ports, the gentle ex-GN grade was/is especially useful for the very heavy iron ore and taconite trains descending into the Twin Ports. The ex-GN's route to the Lakehead at a .4 percent descending grade contrasts sharply with the ex-DM&IR (now CN) route at 2.2 percent from the yard at Proctor to that railroad's ore docks in Duluth. West of Carlton toward Brainerd and Staples, the ex-NP route is almost exclusively used by empties trains (coal and grain), and has limited utility for the heaviest trains due to a fairly constant 1 percent ruling grade between Carlton and Sawyer, whereas the still-in-service ex-GN line via Cass Lake and Bemidji offers a route from the Twin Ports to Grand Forks at a .4 percent ruling grade.

NP's easternmost route, the branch to Ashland, Wisconsin from Superior is abandoned.

A onetime secondary ex-NP main line from Little Falls to International Falls via Brainerd and Bemidji has been abandoned, except for some trackage in Brainerd and north of Little Falls to gain access to Camp Ripley. (BN actually obtained trackage rights on CN subsidiary Duluth, Winnipeg, and Pacific from Superior to International Falls to continue service to the woods products industries in International Falls, but these are no longer utilized.)

The NP also had another secondary mainline from Manitoba Jct. (on the "Northern Transcontinental" route east of Dilworth through Crookston, Grand Forks, Grafton, and Pembina to Winnipeg. Following the BN merger in 1970, this route was downgraded and subsequently largely abandoned in favor of parallel ex-Great Northern routes. Today, all that remains in service is Manitoba Jct. to Ulen (to serve a shuttle grain train facility), Forest River, ND to Honeyford, ND (operated by shortline Northern Plains Railroad), and Forest River to Grafton to Drayton to Joliette (mostly to serve a shuttle grain facility at Drayton). Access to the last segment is via an ex-GN route from Grand Forks to Grafton.

Another segment of ex-NP track in service is in the Fergus Falls area where the onetime route from Wadena, MN to Wahpeton, ND is in service from Hoot Lake to French to serve the Hoot Lake Power Plant and a shuttle grain train facility. The track is operated by the Ottertail Valley railroad and is accessed by an ex-GN route from Moorhead to Fergus Falls via Barnesville.

In summary, with the exception of the "Northern Transcontinental" route and Carlton to Staples, some trackage within the Twin Ports and Twin Cities area, most former NP routes have been abandoned in its "home" state of Minnesota, including its access to the now-defunct (for iron ore extraction) Cuyana Range.

Great Northern:

While only part of the "Northern Transcontinental" route across Minnesota is ex-Great Northern trackage, remaining ex-Great Northern trackage makes up nearly all of BNSF's other main line routes in Minnesota:

Minneapolis-Willmar-Breckenridge-Fargo:

The former Great Northern main line across Minnesota is now part of BNSF's main North/South route from Winnipeg, Grand Forks, and Fargo and from Superior and Minneapolis/St. Paul to Willmar through Sioux City to Omaha/Lincoln and Kansas City. The line also is a major conduit for grain loads and empties to/from South Dakota, Southwestern Minnesota, Iowa, and Nebraska moving to and from the "Northern Transcontinental" for movement to and from the West Coast. The line from Benson, Minnesota into South Dakota is also the access to the ex-Milwaukee Road main line now operated by BNSF between Appleton, MN and Terry, MT.

Fargo-Grand Forks-Winnipeg:

BNSF's primary route to and from Noyes and Winnipeg and the important CN and CP connections is ex-Great Northern trackage via Hillsboro, Grand Forks, Warren, and Hallock. This route has recently been upgraded with CTC and additional sidings between Fargo and Grand Forks, power switches and CTC governing the junction (with the line to Cass Lake and Superior) north of Crookston, and additional sidings between the junction and Noyes.

Minneapolis/St. Paul to Duluth/Superior:

The remaining route between the Twin Cities and Twin Ports is now entirely ex-GN (except for the bridge over the Nemadji River, which is actually a short section of former Soo Line). The NP route has been abandoned between Carlton and Hinckley and between Hugo and St. Paul (which is operated by shortline St. Croix Valley). The GN line was chosen due to its access to Northtown yard and that the NP line northward had a nearly 2 percent grade departing St. Paul (this is also the route on which the Milwaukee Road had trackage rights until truncated as a through route).

Iron Ore:

There are/were three major iron ore producing areas in Minnesota: The Mesabi, Vermilion, and Cuyana "Ranges." Of these Mesabi Range was served by Great Northern (and Duluth, Missabe and Iron Range); the least productive was the Cuyana Range, served by Northern Pacific and Soo Line. 1953 was the peak year for ore traffic from these areas to Duluth and Superior. By 1960, the NP and Soo Line traffic generated declined to just over 1 million tons, while tonnage handled the Great Northern was over ten times that amount. Today, mining in the Cuyana area is shut down and trackage dedicated to it is abandoned. But over 60 years after the peak in iron ore traffic, former Great Northern trackage (now handling taconite) endures. BNSF continues to dispatch trains to load taconite to two or three locations on the Mesabi Range (the actual number of origin and destination points varies by demand). The heaviest trains operated on BNSF (180 cars, nearly 24,000 tons) operate from the Mesabi Range to the ex-GN yard at Allouez, Wisconsin (Superior). While the former Great Northern Allouez ore docks are not used in the historical sense of pushing cars of taconite onto the docks to dump into pockets that dump directly into ships, the ex-GN Allouez yard is the staging area for taconite moved on BNSF, and is currently moved from there partially on the alignment of the original Great Northern docks via a conveyor belt system, and then to a "new" adjacent facility.

Twin Ports to Grand Forks:

North Central Minnesota outside the Mesabi and Vermilion Range areas were well-served by several railroads at one time. Over 300 miles in length, the ex-Minnesota and International route (NP) between Little Falls and International Falls via Bemidji is now

nearly completely abandoned. Also nearly completely abandoned is the 235-mile ex-Soo Line route from Superior through Moose Lake and Bemidji to Plummer is also largely abandoned. The lone survivor in the Bemidji area is the ex-GN Superior to Grand Forks route, used as a low-grade route for grain to the Twin Ports and Twin Cities from Northeast North Dakota and Northwest Minnesota, access to a taconite facility at Gunn, Wood products facilities in Grand Rapids, a coal-fired generating plant near Cohasset, a shuttle grain facility at Erskine and Crookston, and numerous agricultural-related industries at Crookston. The line also interchanges with shortline Minnesota Northern at Crookston and CP at Erksine.

Other ex-GN lines in Minnesota:

Some other ex-GN routes in Minnesota remain in use, mostly by short lines, including Moorhead to Fergus Falls (Ottetail Valley Railroad), the St. Cloud area (including the ex-GN St. Cloud yard, with some trackage operated by the Northern Lines Railroad). Ada to Crookston and St. Hilaire through Thief River Falls to Roseau is operated by the Minnesota Northern Railroad.

Agricultural traffic:

18 shuttle grain train facilities in Minnesota are served by BNSF on ex-GN trackage, and another 2 on ex-Minneapolis and St. Louis trackage (ex-C&NW) solely now accessed by BNSF on ex-GN trackage at Hanley Falls. Only 2 shuttle grain train facilities are on ex-NP trackage in Minnesota, at Ulen (12 miles from the "Northern Transcontinental" route at Manitoba Jct. and the sole remaining part of the ex-NP branch to Winnipeg in Minnesota), and French, on shortline Ottetail Valley and solely accessed by former GN trackage from Fergus Falls.

Nebraska and Iowa:

Milwaukee Road:

Like most railroads in Iowa, much former Milwaukee Road trackage there has been abandoned. Its main line across the state from Council Bluffs to Green Island, once the route of the *Cities* streamliners is gone except for Council Bluffs to Bayard and Herndon to Perry. (Access to Omaha, Nebraska, the only city in Nebraska served the Milwaukee Road, was via Union Pacific from Council Bluffs.) The route from La Crescent, MN (La Crosse, WI) through Dubuque, Green Island, the Quad Cities and Ottumwa is still operated by CP to access Kansas City. Another CP-operated line remains in service from Marquette through Mason City to Sheldon, IA, once part of a through route to the Black Hills. Some other short segments, such as Marathon to Albert City remain.

Northern Pacific:

No trackage in Iowa or Nebraska.

Great Northern:

GN's lone route in Iowa, in the extreme Northwest part of the state, remains in service as part of BNSF's busy north-south route from Winnipeg and the Twin Cities via Willmar and Garretson to Omaha and Kansas City via Sioux Center and Sioux City. Great Northern served Nebraska when it acquired the Sioux City, O'Neill, and Western Railroad in 1900 via its subsidiary Sioux City and Northern. This route, between Ferry (South Sioux City) and O'Neill, was given to the Chicago, Burlington, and Quincy (CB&Q) to operate in 1907. Northeast Nebraska used to be a maze of railroads (mostly part of the Chicago and North Western), but today, other than the ex-UP Nebraska Central branch to

Norfolk, the only lines remaining in service are the ex-CB&Q main line from South Sioux City to Ashland which connected with the Great Northern route north of Sioux City, and ex-Sioux City, O'Neill and Western route, once part of the Great Northern. This 125-mile branch across the Missouri River from Sioux City to O'Neill is of note, even today. Once shortlined (in 1996) as the Nebraska Northeastern Railroad, the line was reacquired by BNSF in 2012 and upgraded. Today, the line is home to five shuttle grain train loading facilities: Laurel, Randolph, Royal, Brunswick, and O'Neill and is the primary conduit for shipping grain in Northeast Nebraska. When grain loaded at these Nebraska facilities bills to West Coast destinations, it is routed north to Willmar and then to Fargo on ex-GN trackage, and then west on the "Northern Transcontinental." BNSF will also frequently route grain trains from southeastern Nebraska and southwest Iowa destined for the West Coast on the same route via Sioux City and Willmar, rather than due west through Alliance, NE and Gillette, WY.

South Dakota:

Milwaukee Road:

While all railroads in South Dakota have had a great amount of route miles abandoned, former Milwaukee Road lines comprise South Dakota's primary rail freight routes today. Most of the trackage is operated by BNSF, including:

1. The former "transcontinental" main line from Appleton, MN (ex-GN connection) through Aberdeen to Terry, MT (ex-NP connection).
2. Aberdeen to Sioux City (ex-GN connection) via Redfield, Mitchell, and Yankton.
3. Mitchell to Sioux Falls via Marion and Canton.
4. Wentworth to Madison (8 miles, connection with ex-GN Sioux Falls-to-Watertown line to serve a shuttle grain train facility).

In addition, other routes are operated by short lines, such as Mitchell to Kimball (Dakota Southern, expanding westward to Kennebec and beyond), Milbank to Sisseton (the appropriately-named Sisseton-Milbank Railroad, largely used for car storage), and Sioux City-Canton-Sioux Falls-Dell Rapids, using some sections of ex-MILW track now operated by BNSF.

The existence of former Milwaukee Road trackage in South Dakota is directly a result of the state of South Dakota intervening to purchase and upgrade these routes after the Milwaukee Road abandoned all its track in 1982 (west of Ortonville, MN). These routes were operated, and later purchased by Burlington Northern, which is why they're part of BNSF today. 22 of 24 shuttle grain train facilities (110-car unit trains) served directly by BNSF in South Dakota are on former Milwaukee Road trackage, and four more are accessed via a connection with the Rapid City, Pierre, and Eastern Railroad at Wolsey. In addition, the routes serve numerous non-shuttle grain facilities and ethanol plants.

Northern Pacific:

Though the Northern Pacific was the primary railroad of southern North Dakota, none of its routes ever crossed the border into South Dakota.

Great Northern:

The most important ex-GN trackage in South Dakota is at Garretson where BNSF's primary north-south line from Willmar, MN to Ashland, NE briefly passes through the state. At Garretson, the ex-GN route from Garretson to Yankton is still in service to Sioux Falls, where it is the primary route into South Dakota's largest city, and allows BNSF to

access former Milwaukee Road trackage it operates to Mitchell, SD as well as interchange to short lines Dakota and Iowa and Ellis and Eastern. Most of the ex-GN Watertown-to-Sioux Falls route is abandoned, except between Wentworth and Sioux Falls, to allow access to grain shuttle facilities at Madison (actually 8 miles west of Wentworth on ex-Milwaukee Road trackage) and Lyons. The 161-mile ex-GN branch line from Benson, MN to Huron, SD is largely intact to allow BNSF to serve Watertown, the site of shuttle grain and ethanol facilities and other local industries. The line is intact but rarely used between Willow Lake and Huron, with the last 13 miles from Yale to Huron actually owned by short line Rapid City, Pierre, and Eastern. The ex-GN branch from southeastern North Dakota to Aberdeen is currently operated by short line Dakota, Missouri Valley and Western, and should allow service to a new shuttle grain facility at Britton in the near future.

Today, only 2 of the 24 shuttle grain train facilities in South Dakota served by BNSF are on ex-GN trackage.

Historical consideration:

It would be easy to take a look at a map of South Dakota railroads in service today and consider their predecessors and conclude, with a modicum of correctness, that the Milwaukee Road created a superior route structure in South Dakota. Generally speaking, this is true, as the strongest routes survive. However, in the case of the Milwaukee Road in South Dakota, it is precisely because they all faced abandonment that they did survive, as these were the routes saved by the state when the Milwaukee Road pulled out in 1982. With the Chicago and North Western having already done a major retrenchment in South Dakota, the only logical candidate railroad to step in and provide service over what would become state-owned trackage would be Burlington Northern connecting with this trackage through ex-Great Northern routes. As the state was dedicated to preserving service on these routes, ex-GN lines such as Sioux Falls to Yankton and Geneseo Jct., ND to Aberdeen were abandoned or downgraded. But had the Milwaukee Road not been so weak that it simply gave up all trackage in the state when it did, it could have very well succumbed competing to lower cost ex-GN routes.

Today on BNSF, shuttle grain trains loaded in southeast South Dakota on the former Milwaukee Road destined for the West Coast (such as Emery or Marion or Canton) will often be routed east to Sioux Falls, then northeast to Willmar, and west on ex-GN routes to the "Northern Transcontinental" route to take advantage of GN's low-cost crossing of the Continental Divide in Montana. Occasionally shuttle grain trains from locations between Mitchell and Aberdeen will be routed east from Aberdeen to Benson, Minnesota and then west for the same reason. And almost always, shuttle grain trains loaded at West Milbank, South Dakota destined to the Pacific Northwest are first routed east to Benson before heading west. This is because West Milbank sits at the bottom of a 13-mile continuous 1 percent westward grade to appropriately-named Summit, SD. The grade is such at BNSF dictates that four "premium" units (C44s, for example) are needed to prevent stalling. To avoid the additional locomotive power, trains run east to Benson, then the mostly ex-GN route to westward to avoid needing the extra power immediately from origin. (On the "Northern Transcontinental" route, the first 1 percent grade is just west of Havre, midway across the state of Montana!)

Therefore, had the Milwaukee Road miraculously survived in to the age of 16,000-ton, 110+ car shuttle grain trains, it's logical to assume, in the same way that these grain trains today gravitate toward ex-GN routes, that numerous shuttle facilities would be built along

the ex-GN routes in South Dakota, rather than “existing” Milwaukee Road track, because it would be most desirable to ship via the lower cost route. *(Using a real-time example, a grain train today between Aberdeen and Spokane via Benson, MN uses 7 road crews; Aberdeen to Spokane via Terry, MT and Montana Rail Link uses 6 road crews and two helper crews. And while the routing via Benson can be made with only 3 premium locomotives and fourth between Havre and Whitefish, the routing via MRL requires manned helpers consisting of 3 and 4 helper units. While the lower cost of routing via the “Northern Transcontinental” route is obvious with regard to crews, locomotive power, and fuel, a present day scenario running these heavy trains via the former Milwaukee Road routing would be even more costly. While the former Milwaukee Road and present day Montana Rail Link have similar operating challenges in South Central and Southwestern Montana, the MRL/BNSF (ex-NP/ex-SP&S) route between Missoula and any West Coast destination where the maximum grade is 1 percent or less would be far superior to the Milwaukee Road routing which would include 1.7 percent and 2.2 percent climbs over St. Paul Pass and the Saddle Mountains respectively. And, if it ever came to that, a ridiculous 3.6 percent ascent of Tacoma Hill if the unthinkable was imagined for an all-Milwaukee Road routing to facilities at Longview, Kalama, Vancouver, or Portland.)*

That’s why today’s “dominance” of ex-Milwaukee Road routes within the state of South Dakota is tainted not only by their very existence being partially attributable to its weakness, but by ongoing current operating practices which often seeks to position the heaviest trains away from former Milwaukee Road trackage at the first available opportunity. Very likely, had the state not financed upgrading former Milwaukee Road track, much more ex-Great Northern trackage would have survived and would have played an even greater role in South Dakota agriculture as shuttle grain train facilities would have been built on existing rail lines.

North Dakota:

Milwaukee Road:

That part of the Milwaukee Road’s “transcontinental” route remaining between east of Terry, MT is in place through Southwestern North Dakota. Overall, the Milwaukee Road had a very limited presence in North Dakota, and all of its branch lines have been abandoned. Bucyrus and Scranton are home to shuttle grain train facilities.

Northern Pacific:

Northern Pacific’s “transcontinental” route across the state of North Dakota is only part of BNSF’s currently “Northern Transcontinental” route for about 20 miles from Fargo to just west of Casselton. From that point into Northeast Montana, it is a conduit for coal loads and coal empties between the Powder River Basin, Southeast Montana and points in North Dakota, Minnesota, and Wisconsin. It also hosts a lignite coal train loaded on the Dakota, Missouri Valley, and Western from Bismarck (interchange point for the DMV&W) and Spiritwood. The Red River Valley and Western Railroad uses the ex-NP main line from Casselton to Jamestown to connect two sections of its railroad.

The ex-NP “transcontinental” line originates much traffic. The Jamestown and Spiritwood areas host several shuttle grain elevators as well ethanol and other agriculture-related industries.

Numerous petrochemical plants in the Mandan and Beulah area (Mandan to Beulah is the

remnant of the one-time branch to Killdeer, ND) are major BNSF customers. Lignite coal is also moved in unit trains from Antelope Valley near Beulah to a generating plant at Glenharold, which also receives trains of sub-bituminous coal from Montana on occasion. Hensler (also on the branch to Beulah), across the Missouri River from Washburn, ND has a shuttle grain train facility.

West of Mandan, local business includes that associated the Bakken oil boom from Richardton to Beach (centered at Dickinson). Crude oil loading facilities are in place at Eland and Fryburg, and BNSF serves three shuttle grain train facilities between Mandan and Dickinson. 12 of 39 shuttle grain train loading facilities served by BNSF in the state of North Dakota are located on ex-NP trackage.

Other than its former “transcontinental” route across the state and Killdeer branch serving the Beulah area, most of the former Northern Pacific in use in North Dakota is operated by shortline Red River Valley and Western. This includes lines between Wahpeton and Oakes to Edgeley; Independence through Lisbon to Davenport and Horace; Jamestown through Carrington and New Rockford to Oberon to Maddock. BNSF and Northern Plains Railroad operate what’s left of NP’s route to Winnipeg in the state between Honeyford, Grafton, and Drayton. All other branch lines in the state have been largely abandoned.

Great Northern:

Great Northern’s original main freight route between Wahpeton and Casselton is now operated by regional railroad Red River Valley and Western. From just west of Casselton through New Rockford and Surrey to the Montana border is BNSF “Northern Transcontinental” route.

Additionally, the longstanding alternate main line from Fargo to Grand Forks through Devils Lake so Surrey (Minot) was dramatically upgraded in 2014 and 2015 and is now the alternate main line to BNSF’s “Northern Transcontinental route. Like the NP and MILW, numerous Great Northern branch lines have been abandoned over the years in North Dakota, but a surprising number remain, mostly to transport agricultural products: Fargo through Prosper to Nolan to Tolna (once continued through to Devils Lake); Larimore to Mayville/Portland; Grand Forks to Grafton, then to Glasston (now shortline Dakota Northern) and Walhalla; After using ex-Soo Line Northern Plains Railroad trackage from Ardoch to Conway, the branch from Larimore to Hannah is in service from Conway to Langdon; Churchs Ferry through Cando to Bisbee; Rugby to Bottineau; Berthold to Niobe to Northgate; Lignite Jct. to Crosby (now operated by shortline Dakota, Missouri Valley and Western).

The former GN yard in Grand Forks is the major marshaling yard for all of fertile Red River Valley agricultural area of Northwest Minnesota and Northeast North Dakota, including the sizable interchanges with CN and CP at Noyes, Minnesota. Gavin Yard in Minot, while no longer a hump yard as in GN days, is the major marshaling point for the east end of the Bakken, as is Williston for the west end. Both Gavin yard and Williston have had their capacities expanded in recent years to handle burgeoning oilfield-related traffic. 11 of 14 unit crude oil loading facilities in the Bakken are on ex-GN trackage in North Dakota (with the other 3 being on ex-NP). 25 of the 39 shuttle grain train facilities in the state of North Dakota served by BNSF are on former GN trackage.

Montana:**Milwaukee Road:**

That part of the Milwaukee Road's "transcontinental" route remaining east of Terry, MT remains in place. The remainder of the Milwaukee Road's "transcontinental" route in Montana has been abandoned, with the exception of short sections in Miles City and Butte. All Milwaukee Road branch lines within Montana have also been abandoned, with the exception of these segments: Sipple to Moore and Fairfield to Choteau operated by BNSF, and Spring Creek Jct. (near Lewistown) to Geraldine operated by state-owned short line Central Montana Railroad.

BNSF continues to regularly haul barley loaded at Fairfield; Moore is the home of the only BNSF shuttle grain train facility on former Milwaukee Road trackage. Grain trains loaded at Moore operate west to the ex-MILW station at Sipple and then via track constructed in the late 1980s to a "new" station called Sipple on Burlington Northern's (now BNSF) main line from Laurel to Great Falls. The section between Moore and the Milwaukee Sipple station actually had to be relaid as it was originally abandoned by the Milwaukee Road in 1980. In 1980, Burlington Northern took over the operation of ex-Milwaukee routes in the Lewistown area, including Lewistown to Geraldine, Lewistown to Heath, and Lewistown to Moore. When the bridge over Spring Creek just east of Spring Creek Jct. was judged to be unsafe and excessively expensive to replace, new track (requiring no significant bridges) was constructed from BN Sipple to Moore to allow Lewistown continued rail access without using the bridge over Spring Creek (and the Lewistown to Spring Creek Jct. portion of the route is out of service, likely permanently). Since then, the line between Lewistown and Moore has been abandoned by BNSF giving Lewistown the dubious distinction of being the largest city in Montana (other than a suburb of another community) without rail service.

The ex-Milwaukee route between Spring Creek Jct. and Geraldine, as well as the former GN branch from Moccasin to Spring Creek Jct. remains in service operated as short line Central Montana Railroad (CMRR). In 2009, an arbiter ruled that BNSF no longer had to pay a per-car subsidy to the Central Montana Railroad that compensated the short line for hauling cars to interchange with BNSF at Moccasin, effectively allowing the cars to be shipped for the same rate from points on the short line (Geraldine and Denton) as from BNSF at Moccasin. Without the subsidy, shipments from the CMRR are no longer competitive and dropped precipitously. In 2011, flooding badly damaged the large ex-MILW trestle over the Judith River east of Ware. A \$4 million state and federal grant allowed the damage to be repaired so the "Charlie Russell Chew Choo" dinner train (Kingston, near Spring Creek Jct. to Denton) could continue to operate, but freight service could not return as the grant didn't include money to repair bridges damaged (by the same flooding) on the ex-GN branch to Moccasin. Whether those bridges are to be repaired is unknown, but the lack of freight service on the CMRR is of little consequence to area ag producers as five area shuttle grain train facilities on BNSF are the preferred outlets for their products, and even if re-established, rates charged for shipments from the CMRR (now, without the per-car subsidy) would be prohibitively expensive compared to that charged by BNSF from the five area shuttle grain train facilities.

Northern Pacific:

None of the former Northern Pacific's "transcontinental" route across the state of Montana is part of BNSF's "Northern Transcontinental" route, but all of it remains in service, and can be broken into two segments. From the North Dakota border to the Huntley area (Jones Jct./Moran Jct.), the route is BNSF's northern coal route, which then use ex-CB&Q trackage southeast of Huntley toward Sheridan and Wyoming coalfields. West of Huntley, operated by Montana Rail Link, the ex-NP route is used for coal trains from Montana and Wyoming to the west coast and BNSF's route for general freight from Kansas City to Washington state. The entire ex-NP "transcontinental" route also of course handles grain loads and grain empties from southwestern North Dakota and South Dakota (off the ex-Milwaukee at Terry) to the west coast. Three of 23 shuttle grain facilities in Montana are on ex-NP trackage. One of 4 active unit coal loading facilities in Montana is on ex-NP trackage (on the Sarpy branch, south of Hysham).

Major locally-generated traffic on the ex-NP main in Montana is in the Billings/Laurel area, primarily from the petrochemical industries. Talc, cement, agriculture and forest products are most often shipped on the remainder of the route. Some ex-NP branch lines continue in service in Montana:

1. Glendive to Sidney. Part of a through route between the Northern Coal Route at Glendive and the "Northern Transcontinental" route at Snowden which includes ex-GN trackage north of Sidney. The ex-NP portion is the southern outlet for Bakken traffic generated in Sidney, Ridgelawn, Ludington, East Fairview, and Dore. Most local service on this route is based from Sidney and Williston.
2. Circle branch. In service about 7 miles from Glendive to serve a company which crushes and loads rock for construction projects. Rock is shipped to North Dakota except during the winter months.
3. Colstrip branch south from Nichols (Forsyth). Used mostly for car storage.
4. Sarpy Branch. Allows access to Absaloka Mine.
5. Logan to Garrison via Butte. Served by Montana Rail Link between Logan to Pipestone (west of Whitehall), out of service Pipestone to Butte, and served by BNSF from Butte to Garrison. The MRL portion serves industries at Logan, Three Forks and Sappington, includes remaining branch line trackage from Sappington to Harrison, and serves a ballast pit at Pipestone. The part of the route between Pipestone and Butte over the Continental Divide is out of service. Butte to Garrison is operated by BNSF and allows interchange with UP at Silver Bow. The BNSF section between Butte and Garrison is an isolated section, connected to the rest of the BNSF system via Montana Rail Link.
6. Branches between Dixon and Dunham (Polson) and between Missoula and Darby, owned by MRL, are in place but service has been "discontinued."

Great Northern:

In addition to the Montana portion of the "Northern Transcontinental" being all ex-GN "transcontinental" route trackage, the following ex-GN routes continue in service in Montana:

1. Sidney to Snowden. Part of a through route between the Northern Coal Route at Glendive and the "Northern Transcontinental" route at Snowden which includes ex-NP trackage south of Sidney. The ex-GN portion is the northern outlet for Bakken traffic generated in Sidney, Ridgelawn, Ludington, East Fairview, and Dore (East Fairview and Dore also have unit crude train loading facilities). Local service on this route is based from Sidney and Williston.

The ex-NP/ex-GN route from Glendive through Sidney to Snowden has much

potential as an alternate route for traffic through Glendive operating on the ex-NP northern coal route. From Glendive to Sandpoint, Idaho via Snowden and Havre (mostly ex-GN) routing is but 3 miles longer than a current ex-NP route between the same stations via Billings, Helena, and St. Regis. Yet the routing via Havre offers substantial operating savings than the current ex-NP routing due to requiring no helpers (for westward trains), no helper power, and fewer crews. This would be especially advantageous for the heaviest westward trains, such as grain trains originating anywhere from Mandan to Glendive inclusive. Eastward, the Glendive-to-Sidney routing could offer a lower cost option for routing unit coal trains. Currently, standard coal trains operating east from Glendive (115 to 125 cars) use four AC locomotives to tackle the numerous 1% grades between Glendive and Dickinson. Operating these trains from Glendive through Snowden to Minot would reduce the maximum grade to .6% and reduce the required number of locomotives from 4 to 3. The Snowden routing does feature a longer route for some trains (such as those to Becker, MN and Superior, WI, about 58 miles) but fewer miles for those destined to Ardoch, ND and Cohasset, MN (45 fewer miles). Unfortunately, the Glendive-Snowden route has yet to be sufficiently upgraded to handle the trains predominantly carrying 143-ton cars (the heaviest cars).

2. Bainville to Plentywood. Once shortlined and operated by the Yellowstone Valley Railroad, the line is once again operated by BNSF and has been upgraded to serve a shuttle grain train facility at Merc, just east of Plentywood.
3. Pacific Jct. (Havre) to Big Sandy. Once part of a through route between Havre and Great Falls, this segment is only used for car storage.
4. Sweet Grass to Mossmain (Laurel) via Shelby and Great Falls. This is a major secondary main line, and is part of the primary Intermountain north-south route in the continental U.S. BNSF interchanges with CP at Sweet Grass/Coutts handling not only north/south traffic, but also traffic from Canada's Prairie Provinces destined for west coast states via BNSF, including solid unit grain trains. Metallurgic coal mined in Southeastern British Columbia on CP also is periodically interchanged to BNSF at Coutts/Sweet Grass. Great Falls is a large local traffic generator shipping petroleum and agricultural products. The route between Shelby and Mossmain, especially westbound, is frequently used as an alternate routing to the ex-NP "transcontinental" route (now MRL) between Mossmain/Laurel and Sandpoint, Idaho. Though 94 miles further than the ex-NP route through Livingston and Helena, the route has superior grades (for instance, a 125-car coal train at nearly 18,000 tons is usually operated with four six-powered-axle locomotives to operate via MRL. These trains receive helpers at Livingston (on rear of train) and Helena (helper cut in midtrain). When such trains operate on the ex-GN routing via Great Falls and Marias Pass, they require no additional power, helper or otherwise). This route is also the location of two new track sections constructed in the past 30 years: Sipple (junction point near Buffalo) and Sipple (ex-Milwaukee station) to access ex-Milwaukee Road trackage; Broadview (actually a new station named Walter) to the Signal Peak coal mine south of Roundup.)
5. Valier to Valier Jct. This is the former (and original) Montana Western Railroad.
6. Eastham Jct. to Power. This connects a rare remaining ex-Milwaukee Road segment of track (Choteau to Fairfield) to the rest of the BNSF system. Malting barley is the primary commodity shipped from facilities in Fairfield and west of

Power.

7. Great Falls to Kershaw. Once part of a through route between Great Falls and Havre, this segment serves three shuttle grain train facilities in the Fort Benton area.
8. Moccasin to Spring Creek Jct. Now out of service due to bridges being out of service due to severe flooding in 2011, this line is operated by Central Montana Railroad and would be its link to the outside rail world.
9. Great Falls to Helena. The line is still intact, but out of service as a through route due to a slipout between Great Falls and Ulm. With no online customers, the remainder of the line is used for car storage. The ex-GN line from the west end of Helena (Helena Jct.) to Butte was abandoned in segments after the 1970 BN merger, except for one short segment. A connecting track was built from the ex-NP main track in East Helena to the ex-GN line from Helena to Butte, which remains in service to this day for the three miles to Montana City, and is operated by Montana Rail Link. The cement plant off ex-GN trackage at Montana City is the largest rail customer in the Helena area.
10. Columbia Falls to Kalispell. Operated by shortline Mission Mountain Railroad. Once part of GN's original main line through Kalispell and over Haskell Pass. Serves wood products industries and grain elevator (which can ship 48-car unit trains) in Kalispell.
11. Stryker to Eureka. Operated by shortline Mission Mountain Railroad. This is the remnant of the GN main line from Stryker to Jennings via Eureka, which was abandoned west of Eureka with the construction of Libby Day and subsequent creation of Lake Koocanusa. Used for car storage and handling wood products.

19 of 23 shuttle grain train facilities in the state of Montana are on ex-GN trackage. Agricultural products are the primary origin commodity shipped former GN trackage in Montana.

Washington and Northern Idaho:

Milwaukee Road:

While most of the Milwaukee Road's "transcontinental" route is abandoned across Northern Idaho and Washington, a few sections still survive:

1. St. Maries to Plummer, operated by shortline St. Maries Railroad; (other trackage south of St. Maries toward Bovill is intact, but not in service)
2. Warden to Othello, operated by shortline Columbia Basin.
3. Othello to Royal City Jct., owned but not operated by the state of Washington.
4. Seattle to Tacoma, operated by Union Pacific as their access to Seattle.

A branch from Sumas to Lynden, continues to be operated by BNSF, but most of the remaining surviving branch line trackage is operated by short lines, such as Newport, WA to Metaline Falls (Pend Oreille Valley), in the Moses Lake, WA area (Columbia Basin), and Tacoma through Frederickson to Morton and the Chehalis area (Tacoma Rail).

Northern Pacific:

All of Northern Pacific's "transcontinental" route across the states of Idaho and Washington is intact. East of Sandpoint, the line is operated by Montana Rail Link, and Sandpoint to Spokane is part of BNSF's "Northern Transcontinental" route. Spokane to

Pasco is also part of the Portland leg of the “Northern Transcontinental”, which is used in preference to the ex-SP&S routing between the same points (One exception is between Spokane and Lakeside Jct. – between Spokane and Cheney – where the former NP and former SP&S routes are both used, with eastbound trains running on ex-NP and westward trains running on ex-SP&S track for the most part; The most consistent traffic flow for the heaviest trains is westbound and the SP&S line has a grade of only .8 percent westward grade whereas the NP is 1.2 percent.) Between Pasco and Auburn, the ex-NP “transcontinental” route is a secondary main line. Through trains on the route are eastward empties trains (coal, crude oil, or grain; loaded trains use the ex-SP&S route via Wishram); there is also scheduled local service between Pasco and Yakima, and as-needed service to Ellensburg. Other than the ex-NP “transcontinental” route, these are other former NP routes still in use in Idaho and Washington.

1. Seattle to Vancouver, WA. This is part of the major north-south west coast rail route in the United States, not only for freight, but also for passenger trains. The route has received numerous upgrades to accommodate increased Amtrak *Cascades* and Sound Transit *Sounder* frequencies. In addition to handling BNSF north/south freight, it is also part of BNSF’s “Northern Transcontinental” route in that unit coal, crude oil, and grain trains destined to West Coast ports are routed through the Cascade Mountains via the ex-SP&S route along the Columbia River to Vancouver, WA then on this ex-NP route to places like Kalama, Longview, Aberdeen, Tacoma, and Seattle, as well as north of Seattle (via ex-GN trackage) to ports in the Anacortes, Bellingham, and Vancouver, BC areas. Union Pacific’s only access to the Tacoma and Seattle areas is via trackage rights on this route from Vancouver, WA to Tacoma (Reservation).
2. Sumas to Black River. Once a secondary NP route to interchange with CN (via British Columbia Hydro and Power Authority) and CP at Sumas, the line is truncated at several locations. BNSF operates regular local service (from Everett) between Sedro-Woolley and Sumas to interchange with the Southern Railway of British Columbia Railway (successor to the British Columbia Hydro and Power Authority; Interchange with CN and CP is done directly in the Vancouver, BC area now via ex-GN trackage). BNSF and shortlines handle remaining sections of track in service around Everett, Snohomish, and Renton.
3. Puget Sound and Pacific Railroad. This shortline operates mostly ex-NP track from Centralia through Elma to Aberdeen-Hoquiam and a line out of Elma to the Bremerton area (partially owned by the United States government). Traffic has been growing on this route, and routinely sees entire 100+ car unit grain trains destined for export through the Port of Grays Harbor.
4. Northwest Railway Museum. Operates about 6 miles of railroad for a tourist operation based in Snoqualmie, WA. Once part of an ex-NP route from Seattle to North Bend and beyond.
5. Columbia Basin Railroad. Operates a branch line out of Connell, WA to Warden, Wheeler, and Schrag in the Moses Lake area. Also operates ex-NP trackage in the Yakima Valley from Gibbon to the Sunnyside area, and around Yakima. All the areas served are major agricultural producers, and provide significant traffic for BNSF in and out of Pasco.
6. Washington and Idaho Railroad. Owned by the state, this route is ex-NP trackage from Marshall (near Spokane) to Moscow, ID (the route once continued Arrow, ID for Lewiston). Agriculture-based, the route produces insufficient traffic to support a shortline operator. One shuttle grain train facility, at McCoy, was opened in

2013.

7. Eastern Washington Gateway Railroad. Owned by the state, this route is ex-NP trackage from Cheney (near Spokane) to Coulee City (the route once continued to Wheeler, now on the Columbia Basin Railroad). Agriculture-based, the route produces insufficient traffic to support a shortline operator. The line does operate “co-load” trains (multiple origin points to a single destination) at times from places like Coulee City, Hartline, and Almira.
8. Great Northwest Railroad and Bountiful Grain and Craig Mountain Railroad. These two shortlines operate what’s left of the former Camas Prairie railroad which was co-owned by the Northern Pacific and Union Pacific. Routes still in service are Riparia, WA through Lewiston through Spalding to Kamiah, and Spalding to Cottonwood. The Great Northwest Railroad operates west of Spalding and the Bountiful Grain and Craig Mountain east. Access to BNSF and UP is at Riparia, and the BNSF local (“Low Line”) operates from Pasco to Riparia, almost entirely via UP trackage rights.

In addition to the routes indicated, other short sections of ex-NP trackage remains in operation near places like Hauser, ID; Pasco, WA, Vancouver, WA, Tacoma, WA, and Wickersham, WA. The NP at one time had by far the greatest amount of trackage in Washington State. Indeed, its trackage comprises the most route miles even today, but much of the maze of trackage once in place around Walla Walla, Tacoma, and Chehalis is gone.

Great Northern:

Great Northern’s original main freight route in Idaho remains in service. East of Sandpoint (Boyer), it is BNSF’s “Northern Transcontinental” route; Sandpoint to Dover is owned by BNSF and used by UP and short line Pend Oreille Valley; Dover to Newport is operated by short line Pend Oreille Valley. In Washington, the ex-GN main line is abandoned between Newport and Dean, and is in service as a BNSF branch to Chewelah from Spokane. Trackage through downtown Spokane was taken up in the early 1970s as the location of the Great Northern Station on Havermale Island would be the focus for Expo ’74, the Spokane World’s Fair. West of Spokane, GN’s “trancontinental” route continues as BNSF’s “Northern Transcontinental” route, largely for intermodal traffic, and empties trains from the Seattle area or from the Bellingham and Vancouver, BC areas. Additionally, these former GN routes continue in service in Washington state:

1. White Rock, BC/Blaine, WA to Everett. This is part of the major north-south west coast rail route in the United States, not only for freight, but also for passenger trains. The route has received numerous upgrades to accommodate increased Amtrak *Cascades* frequencies. In addition to handling BNSF north/south freight, it is also part of BNSF’s “Northern Transcontinental” route in that unit coal and crude oil, destined to West Coast ports are routed through the Cascade Mountains via the ex-SP&S route along the Columbia River to Vancouver, WA and to Everett then on this ex-GN route to places Anacortes (Fidalgo), Cherry Point and Arco (Bellingham), and Roberts Bank, BC. Though the UP does not interchange with CN in the American Northwest/Canadian Southwest area, this line (along with the ex-NP route south of Seattle) frequently handles solid trains of traffic between the two railroads via BNSF.
2. Fidalgo to Sedro-Woolley. This route, connecting with BNSF’s Seattle-Everett-Blaine-Vancouver, BC line at Burlington, WA accesses important port facilities at

Fidalgo (Anacortes) and ex-NP trackage at Sedro-Woolley (the remaining part of the ex-NP route to Sumas).

3. Seattle to Vancouver, WA. While this critical segment of the major north-south West Coast rail route was owned by Northern Pacific, Great Northern had been granted full trackage rights thereon since 1910. (By 1970 and the Burlington Northern merger, of the through freight trains operated by GN and NP between Seattle and Vancouver, WA, 60% were Great Northern trains.) In addition to handling BNSF north/south freight, it is also part of BNSF's "Northern Transcontinental" route in that unit coal, crude oil, and grain trains destined to West Coast ports are routed through the Cascade Mountains via the ex-SP&S route along the Columbia River to Vancouver, WA then on this ex-GN route to places like Kalama, Longview, Aberdeen, Tacoma, Seattle, and the Anacortes, Bellingham, and Vancouver, BC areas.
4. Cascade and Columbia River Railroad. Operates the ex-GN branch from Wenatchee to Oroville. Handles agricultural products: grain and forest.
5. Kettle Falls International Railroad. Interchanges with BNSF at Chewelah, all part of the ex-GN branches from Dean (north of Spokane) through Colville to Kettle Falls, with two branches to the British Columbia border. The primary commodity handled is forest products, but it also delivers ore to the Teck smelter in Trail, BC (via truck from the railhead at Waneta, BC).

Other short sections of ex-GN track are still used in Washington and Idaho, including Rosalia, WA to Spring Valley, WA operated by the Washington and Idaho Railroad (state owned). As GN did not have an exceptionally large branchline network in the state of Washington, the amount of its track that has been abandoned or state-owned is minimal compared to NP or UP.

Oregon:

Milwaukee Road:

The Milwaukee Road didn't serve Oregon until it was granted trackage rights on Burlington Northern between Longview Jct., WA and Portland (ex-NP and ex-SP&S trackage) as a result of the 1970 BN merger. Service ended in 1980 when the Milwaukee Road abandoned most of its trackage west of Miles City, Montana.

Northern Pacific:

NP had trackage rights on subsidiary Spokane, Portland, and Seattle from Vancouver, WA to Portland, part of the main West Coast north-south rail line. In Northeast Oregon, NP had branch lines from Pasco to Pendleton and Athena, and to Milton-Freewater via which was once the Walla Walla Valley Railroad. All ex-NP trackage in Northeast Oregon has been abandoned.

Great Northern:

GN had trackage rights on subsidiary Spokane, Portland, and Seattle from Vancouver, WA to Portland, part of the main West Coast north-south rail line. A rail route through Central Oregon is part of BNSF's major north-south line through Oregon and California. The line was originally SP&S subsidiary Oregon Trunk from Wishram, WA to Bend, OR, then Great Northern to the California border south of Klamath Falls with trackage rights on Southern Pacific from Chemult to Klamath Falls. GN/SP subsidiary Oregon, California, and Eastern (Klamath Falls to Bly) has been abandoned.

California:

Milwaukee Road:

No trackage in California.

Northern Pacific:

No trackage in California.

Great Northern:

The former Great Northern line from Klamath Falls, OR to Bieber, CA remains as BNSF's primary West Coast north-south route today. GN interchanged with Western Pacific at Bieber (Nubieber) and through WP's connection with the Santa Fe Railroad at Stockton, California, offered an alternate north-south route to that of Southern Pacific between Portland, Oregon and California points. (At Portland, SP connected with both GN and NP to move shipments to/from Seattle, but GN had the advantage as being the single line carrier all the way to Vancouver, BC). In 1983, the Western Pacific was purchased by Union Pacific and interchange traffic through Bieber declined. As a result of the 1996 acquisition of Southern Pacific by UP, the ex-WP route from Bieber (and the ex-GN BNSF connection) to Keddie was sold to BNSF and BNSF was granted trackage rights on UP (ex-WP and ex-SP trackage) to Stockton, California, re-establishing the onetime ex-GN/WP/AT&SF routing. Great Northern had one branch line in California, from Lookout on the main line to Hambone, which was actually operated by shortline McCloud River Railroad which interchanged with GN and WP at Lookout/Bieber. The line to Hambone, and all the McCloud River Railroad has been abandoned.

Canada:**Milwaukee Road:**

No trackage in Canada.

Northern Pacific:

The Northern Pacific had trackage in one province, Manitoba. The Northern Pacific and Manitoba Railway was formed as competition with the Canadian Pacific and was jointly owned by the Northern Pacific and the province of Manitoba. Relatively extensive trackage was constructed starting in the 1880s, including from Emerson (on the border) through Morris to Winnipeg, and then Morris to Brandon and Hartney in the southwest part of the province. A Winnipeg to Portage-la-Prairie line was also constructed. But due to financial difficulties, including the parent company (NP) trying emerge from bankruptcy in the 1890s, the Northern Pacific gave up the trackage in Manitoba to the province which promptly sold it to the fledgling Canadian Northern Railway in 1901, later reorganized as Canadian National. NP and GN received trackage rights between the border at Emerson and Winnipeg. Today this route from the border at Emerson to Winnipeg is the only international rail crossing in Manitoba (except for CN's Winnipeg-Thunder Bay route through the "Northwest Angle" of Minnesota), but the CN interchange to BNSF on the American side is with former Great Northern trackage south to Crookston and Grand Forks. (The ex-NP route from the former NP main line at Manitoba Jct. has largely been abandoned.) The Winnipeg-to-Portage-la-Prairie route is now part of CN's transcontinental route. NP and GN came to jointly own the Midland Railway Company of Manitoba, a switching line in Winnipeg. This remains a BNSF entity today.

Great Northern:

The Great Northern had trackage in two Canadian Provinces:

Manitoba:

The GN had several branch lines in the province, including one to Brandon (from the main line at Churchs Ferry) and to Morden (from Grafton, ND) and Portage-la-Prairie,

from Neche, ND). All this Manitoba trackage is abandoned. The line from Neche to Portage-la-Prairie was originally constructed by the Midland Railway of Manitoba, which became a GN subsidiary in 1909. In 1911, the Midland Railway company of Manitoba constructed terminal facilities in Winnipeg and made a deal with three CN predecessors (Canadian Northern, Grand Trunk Pacific, and National Transcontinental Railway) for use of their terminal facilities, and in 1913 for trackage rights on Canadian Northern (originally the Northern Pacific and Manitoba Railway) between Winnipeg and Emerson to connect with Great Northern trackage there. Today, BNSF retains a switching presence in Winnipeg from its Midland Railway of Manitoba roots, and it retains trackage rights on CN to Emerson, though all trains today are run with CN crews. BNSF also markets unit grain trains to BNSF destinations from Letellier, Morris, and Lilyfield (Winnipeg). While the railroad from Winnipeg to the border at Emerson was initially an NP/provincial endeavor, that the NP gave it up and subsequent trackage rights were gained through a GN subsidiary, and that present day connection on the American side of the border is all via ex-GN trackage, it's clear that the remnant of influence by American railroads in the province of Manitoba has Great Northern roots.

British Columbia:

At one time, GN had as many as 10 border crossings from Montana, Idaho, and Washington into British Columbia. Today, four remain in service, three on the shortline Kettle Falls International Railway: A line from Kettle Falls to Columbia Gardens, BC (once the line to Nelson), and a line from Kettle Falls entering the province near Grand Forks, BC and then exiting the province to serve Danville, WA (once a line to Republic, WA and beyond). Near Grand Forks, BC, interchange is made with a switching line, the Grand Forks Railway, which operates on ex-Canadian Pacific Railway trackage. GN's primary competitor through history was Canadian Pacific, and GN forged numerous branch lines into Southern BC to compete. As most railroads in the southern interior of BC were abandoned, GN lines were the first to be withdrawn. But in the Trail (Waneta) and Grand Forks areas, the only rail access continues to be via former Great Northern trackage.

The most important transborder rail line operated by any American railroad is the ex-GN route from Everett through Bellingham and Blaine to White Rock, BC and Vancouver, the largest metropolitan area in Western Canada, and third largest in Canada. The line is the sole route for interchange from CN to BNSF and UP in the west, and the most important interchange in the far west between CP and BNSF. In order for CN and CP trains to access the Roberts Bank Superport, constructed south of Vancouver (open in 1970), a new railroad that would cross the ex-GN route Colebrook, BC would be needed. As a condition of building across its route, GN and later BN and BNSF would gain rail access to Roberts Bank. This allowed the shipments of coal to this port; important as there is no such coal terminal in existence on the American west coast. BNSF operated the entire ex-GN route from the border to Vancouver until 2006 when CN started operating the route from the south end of the Fraser River Bridge to Vancouver. Prior to that, CN, and later VIA passenger trains using Pacific Central Station in Vancouver (also used by GN passenger trains after the adjacent GN station in Vancouver was demolished) could traverse the entire width of Canada on Canadian Railroads (a mostly CN routing), but the last leg (until VIA-owned trackage at the station) was on the former (American) Great Northern.

Great Northern never entered Saskatchewan, but it did interchange with CN at Northgate,

ND/Northgate, SK. CN has subsequently abandoned the route north from Northgate, but the ex-GN route south from Northgate to the “Northern Transcontinental” route at Berthold remained in service. Today, BNSF does serve Saskatchewan as rails again cross the border – this time operated by BNSF – to serve a new grain / crude oil facility constructed in Northgate, Saskatchewan.

Conclusion/Legacy: In 2016, not only does the ex-GN “transcontinental” route make up most of BNSF’s “Northern Transcontinental,” but other routes, notably in north-south alignments tend to be ex-GN routes. The ex-NP “transcontinental” continues in service, but largely not in its original capacity. It is split east of Billings, Montana between a coal route from the Powder River Basin to the Northern Plains states to the east and a Denver/Kansas City route to the Pacific Northwest to the west. The ex-Milwaukee Road main (largely abandoned west of Terry, Montana) exists largely to serve ag producers in South Dakota.

History to Legacy: Passenger service

In 2011 while attending the Northern Pacific Railway Historical Society convention in Butte, Montana, some friends and I took a break and made a side trip to Livingston, Montana and visited the Livingston Depot Center Museum, housed in the former Northern Pacific station. Each summer, portions of the displays change, but the core railroad-oriented theme of the museum is about the same.

There was a small exhibit dedicated to Amtrak, which served Livingston from June of 1971 until October of 1979, when the *North Coast Hiawatha*, the successor to NP’s *North Coast Limited*, was discontinued. Reference was also made to the fact that Amtrak’s *Empire Builder* (successor to the Great Northern train of the same name) continued to operate, and, according to text accompanying the exhibit, was “a decision now reviewed with questionable merit.”

When I asked one of the volunteers at the museum just exactly WHO considered keeping passenger train service on the *Empire Builder* route to be of “questionable merit,” he did not know who was responsible writing the text. So, I asked him the next logical question: “Is it the general consensus in Livingston that operating the lone Chicago-Pacific Northwest passenger train the current *Empire Builder* route is illogical because the deceased *North Coast Hiawatha* served all of Montana’s ‘big’ cities?” He answered in the affirmative. This was not a surprise.

While pointing out that Montana really has no “big” cities, I also instructed him how that at the inception of Amtrak, the *Empire Builder* route was chosen because each of its segments (as its route at the creation of Amtrak changed somewhat) had the highest existing ridership (Chicago-Minneapolis; Minneapolis-Fargo; Fargo-Spokane; Spokane-Seattle.) He was also unaware the *Empire Builder* was the most-riden long distance train in the Amtrak system, and that the 2009 *North Coast Hiawatha* reinstatement feasibility study done by Amtrak determined that such a train would still carry fewer passengers than the *Empire Builder*, even though some of the passengers might ride a *North Coast Hiawatha* instead of the *Empire Builder* were it available.

For those of us who are Montana natives, and especially those of us who grew up on the Hi-Line, such misperceptions are nothing new, and indeed continue to this day. But these are the facts. (There is also the undocumented and unsupported conjecture that Burlington Northern wanted Amtrak off the ex-NP route to run coal or that Amtrak wanted the faster train...) Even less known and understood is the WHY patronage along the ex-GN route across Northern Montana

(without any “big” cities) exceeded that of the ex-NP and its metropolis-laden route through Southern Montana. One obvious reason is more transportation alternatives in Southern Montana (much more air service, parallel bus service, and a parallel interstate highway), but could this explain why that on Amtrak day in 1971, there was 15 percent more passengers on the ex-GN route between Minneapolis and Spokane than on the also more scenic ex-NP? No, because to really understand why the *Empire Builder* route across Montana survives to this day, one needs to go all the way back to the end of World War II, and track passenger service on the various routes until Amtrak Day, May 1, 1971.

The beginning of Great Northern being the preferred rail passenger carrier between the Upper Midwest and Pacific Northwest began with the inauguration of the streamlined version of the *Empire Builder* in early 1947. This was America’s first post-war western streamliner, and was well-received. The Milwaukee Road countered later that same year with the inaugural of the *Olympian Hiawatha* on a schedule matching that of the *Empire Builder*. But for the Northern Pacific, not a lot changed. Its flagship *North Coast Limited* would be streamlined over the course of then next 5 years (by 1948 or so, but carrying heavyweight cars intermittently), and its running time would not be reduced to compete with the *Empire Builder* and *Olympian Hiawatha* until November of 1952.

The most significant change in rail passenger service between the Upper Midwest and Pacific Northwest happened in 1951 when Great Northern re-equipped its 1947 version of the streamlined *Empire Builder* with brand new trainsets. The new equipment was dubbed the “Mid-Century” *Empire Builder*, and the 1947 equipment became a second streamliner, the *Western Star* (inaugurated on June 3, 1951, replacing GN’s *Oriental Limited*) also operating between Chicago and Seattle/Portland. With two bona fide streamliners on its long haul route, the addition of the *Western Star* cemented GN’s dominance of rail passenger service along the Northern Tier:

The *Western Star*, while quickened to operate at streamliner speed, was actually not any faster than the *Oriental Limited* (which was its predecessor) because it continued to make many more stops than the *Empire Builder*, and starting in 1952 between Havre and Shelby took a time-consuming detour to (at the time) Montana’s largest city, Great Falls. Yet, its schedule was equal to that of NP’s flagship *North Coast Limited* as well as Milwaukee’s secondary train the *Columbian*, but had superior equipment.

From the inception of the *Western Star* in June 1951 until November of 1952, the inferiority of NP passenger service across Southern Montana compared to that offered by GN to the north was the most pronounced. The NP’s flagship *North Coast Limited* continued on a schedule some 12 hours slower than the *Empire Builder* and on par with the *Western Star*. NP’s secondary train, the *Alaskan*, could not even be considered as player in the transcontinental market. Run with heavyweight equipment (and without sleeping cars operating the entire length of the run and without any meal service), it offered no through cars to/from Chicago. The train was so slow westbound that it was truncated in Spokane, with passengers transferring to the *North Coast Limited* operating only a few hours behind. Eastbound, the *Alaskan* dwelled 8 hours in Glendive, Montana (and was passed by the eastbound *North Coast Limited*) to depart at dawn, to fulfill a requirement in North Dakota that all communities have access to rail passenger service during “daylight” hours. While the flashy *Empire Builder* and *Western Star* streamliners of the Great Northern got most of the attention and long haul passengers in the Northern Tier, people in places like Billings and Yakima (along the NP) were known to drive to Roundup and Ellensburg

to take advantage of the faster *Olympian Hiawatha* rather than endure the pokey *North Coast Limited*.

In spite of the *North Coast Limited*'s schedule disadvantage, reducing its schedule was not immediately looked upon as necessity by NP management. Even after the inauguration of the *Olympian Hiawatha*, NP continued in negotiations with the Milwaukee Road with regard to a possible consolidation of their two flagship trains either by running one train on parts of both routes, or running on both routes, but on alternate days. In this case, the NP had it right: There were too many trains operating in a corridor with multiple carriers without enough population base to support it (as other railroads discovered, such as Chicago-Florida service run by the *South Wind*, *City of Miami*, and *Dixie Flagler*).

Finally, on November 1952, Northern Pacific announced its new (it had become totally a streamliner), faster *North Coast Limited*, to compete in schedule with the *Empire Builder* and *Olympian Hiawatha*. Yet, while faster, the *North Coast Limited* never could quite match the running time of the *Empire Builder* on the latter's shorter, faster route. Also in November 1952, NP replaced the *Alaskan* with the *Mainstreeter*, which operated between St. Paul and Seattle, with through cars to/from Chicago via CB&Q. The *Mainstreeter* continued to run with some heavyweight equipment, and assumed the "slower" schedule (and train numbers, 1 and 2) of the *North Coast Limited*. The *Mainstreeter*, with a dining car and sleeping cars was a vast improvement over the *Alaskan*.

The enhanced streamlined equipment did more to make the *North Coast Limited* competitive with the *Empire Builder* and *Olympian Hiawatha*. But the "new" *Mainstreeter*, like the Milwaukee Road's *Columbian*, was hardly a competitor to GN's *Western Star*, which was, after all, the one-time streamlined *Empire Builder*!

Dome cars were all the rage in postwar streamliners, and those to the Pacific Northwest would be no exception. Milwaukee Road's *Olympian Hiawatha* was the first such train across the Northern Tier to have such cars when the full-length home-built "Super Domes" were introduced in on January 1, 1953. While the Super Dome did allow a panoramic view to a large number of passengers (68 dome seats), the cars were not considered to be a success as they offered limited forward visibility (unlike Budd-built dome cars), which many consider to be of prime importance riding a dome car. One car was assigned to each train. In 1954, Northern Pacific upgraded its streamlined *North Coast Limited* even further with dome cars from the Budd company. Each train was to have four 24-seat domes; NP copied the "Vista-Dome" reference to cars and routinely then referenced its flagship train as the "*Vista-Dome North Coast Limited*."

A discussion about dome cars is a reminder of the lack of creativity with regard to the Northern Pacific with regard to name recognition. Budd-built dome cars were just that: dome cars built by the Budd company. Burlington pioneered the name "Vista Dome" with its dome cars. As the *California Zephyr* ran not only on the Burlington, but also Rio Grande and Western Pacific, it's not surprising that those other railroads also called the cars "Vista Domes" and marketed the train in unison as the "Vista Dome *California Zephyr*." (And also because the concept for dome cars was conceived during a trip through Glenwood Canyon, Colorado along what would be the route of the *California Zephyr*.) But other railroads, including the Great Northern, didn't mimic the "Vista Dome" moniker. They were proud of their domes and created their own name for their cherished dome cars ("Great" on GN; "Skyline" or "Scenic" on CP; "Strata" on B&O; "Pleasure" on AT&SF; "Super" on Milwaukee are examples), or just in the equipment listing as

“dome car.” Northern Pacific, however, was a rarity, copying the “Vista Dome” name from the CB&Q rather than creating a unique moniker for their dome cars.

This put the GN in a precarious position. With two streamliners to the Northwest, it was the unquestioned leader in rail passenger service across the Northern Tier. Some at the GN proclaimed that they did not need dome cars to be the leader in the Northwest. But Charles Finley of the GN's traffic department stated, “If we do not furnish dome cars, we are falling behind in the race. Good passenger service attracts new and repeat freight business. It is a creator of good will, without which all aspects of the company's operations will suffer.” Hence, the decision was made to order Budd domes for the *Empire Builder*.

Great Northern's decision to become a dome car railroad came with a splash. Each *Empire Builder* train set would receive four dome cars: three 24-seat dome coaches and one 78-seat full-length lounge car. (All Great Northern domes were “Great” domes – even the “short” cars.) When its dome cars entered service, GN's *Great Dome Empire Builder* featured more dome seats than any other regularly assigned passenger train in American history, and was the only train to feature a choice of “short” and “full-length” Budd domes on one train.

Some, notably in the NP camp, have been critical of Great Northern's dome cars, notably the full-length lounge, focusing that the dome section could not be adequately cooled during the summer, and that visibility was not as good as the short version of the cars. While cooling could be an issue on occasion, as was the case with many passenger cars before the onset of head-end power during the Amtrak era, the concept of a full-length lounge stood the test of time. Today, the only dome car remaining in general use on Amtrak is ex-GN full-length dome lounge car *Ocean View*. Amtrak regularly uses this car for special events and during the fall, assigns the car to trains like the *Adirondack* and *Cardinal* to best view fall foliage. Many of the newer cars built for tourist trains like the *Rocky Mountaineer* and for cruise companies used on the Alaska railroad mirror the concept of a full-length dome. Not only are such cars more efficient as they carry a larger number of people, but the length of the car provides a feeling of openness not experienced by a short dome. And, only on the *Empire Builder*, at least for sleeping car passengers, did you have the choice of riding in the full-length or a shorter dome car. And with more dome seats than the competition, GN simply enabled more passengers to experience the dome at any given time. Also “touted” as a shortcoming for the *Empire Builder* was its “late” entry in providing dome cars to patrons. Receiving domes over a year later than the *North Coast Limited* could only be considered a negative if it was the primary criterion for evaluating a passenger train; the reality is this was inconsequential compared to the 5 years that the *North Coast Limited* ran some heavyweight equipment and continued on its pokey schedule compared to the completely streamlined and much faster *Empire Builder*. While the *Olympian Hiawatha* operated for over two years (prior to the addition of dome cars on the *Empire Builder*) with its full-length dome, the quality (forward visibility) and rough ride of the cars never allowed the train to commonly be considered amongst the nation's great domeliners.

Milwaukee Road passenger service between Great Falls and Harlowton, which connected with the *Columbian*, was discontinued in 1953. This lengthy nearly-200-mile branchline train was the only fairly long-distance passenger service the Milwaukee Road operated west of Aberdeen that was not on its main line. The *Columbian* (like the *Mainstreeter*, never a streamliner, and used heavyweight equipment) was discontinued in 1955 (being truncated in sections before being discontinued altogether west of Minneapolis, east of which it was combined with the *Pioneer Limited*). Also in the middle 1950s, depending on demand and season, GN began combining its

Fast Mail train (between St. Paul and Seattle) with the *Western Star* over parts of its run. (Great Northern operated the *Fast Mail* between St. Paul - where it connected with the Milwaukee Road train of the same name – and Seattle, and included a rider coach also providing supplemental passenger service along Great Northern’s main line.)

While the GN *Empire Builder* and the NP *North Coast Limited* offered a similar array of accommodations and amenities, the streamlined *Western Star* continued to be the catalyst enticing more passengers to ride Great Northern than the competition by virtue of its being a second streamliner on GN’s transcontinental route. Great Northern invested heavily in the promotion of Glacier National Park with its many hotels and chalets (and today those surviving in and around Waterton-Glacier International Peace part are the largest number of railroad-built hostelrys for one such park in North America). Yet in spite of the importance of these national parks, GN did not stop its flagship *Empire Builder* at the Glacier Park Station and Belton from 1947 to 1967. GN felt its streamlined *Western Star* was a sufficiently fine train to handle this important park traffic.

A consist of the CB&Q *Black Hawk* from 1959 (in the book *Northern Pacific Pictorial, Volume Five*, by John Strauss) is an interesting insight into the importance of the *Western Star* and how it bolstered GN passenger revenue. The *Black Hawk*, running overnight between Chicago and the Twin Cities, conveyed the Chicago cars for the *Mainstreeter* and *Western Star* from Chicago to St. Paul. The train departing Chicago had 21 cars; of these, 10 cars operated through to Minneapolis as the *Black Hawk* (1 RPO, 3 baggage, 2 coaches, 1 dining-lounge, and 3 sleeping cars). Only three of cars operated through to Seattle on NP’s *Mainstreeter*: 1 baggage, 1 coach, and 1 sleeping car). The remaining 8 (1 baggage, 3 coaches, 3 sleeping cars, and an observation lounge car) operated west of St. Paul on GN’s *Western Star*, a capacity some threefold more than the *Mainstreeter*.

While the *Mainstreeter* was a huge improvement over NP’s *Alaskan*, it paled in comparison to GN’s *Western Star*. Heavyweight (older) dining cars were used on the *Mainstreeter* until 1958; Until 1956 lounge car service consisted of heavyweight (leased from the Pullman company) observation cars, replaced with streamlined “Holiday Lounge” cars. The cars were removed from the *Mainstreeter* following the Seattle World’s Fair in 1962.

1960 ushered in another major change to Great Northern passenger service. The *Western Star*, which had been operating via Grand Forks and Great Falls was speed up dramatically (about 7 hours) when it began operating via New Rockford and Chester instead. GN trains 3 and 4 began operating between St. Paul and Minot preserving CB&Q and *Western Star* connections on each end. At Havre, trains 3 and 4 between Havre and Great Falls offered through coach and sleeping car accommodations off the *Western Star* from St. Paul. The speedup greatly improved travel options along GN’s transcontinental route. Previously, the westbound *Western Star* was scheduled to arrive in Seattle only 2-3 hours prior to the *Empire Builder* in the morning, but the enhanced schedule in Seattle (but not Portland) the night before.

The new *Western Star* schedule was also about 9 hours faster between the Twin Cities and Seattle than NP’s *Mainstreeter*, which continued on the original *North Coast Limited* timing until 1968.

1961 was another important year in the history of passenger trains between the Upper Midwest and Pacific Northwest. In the spring of that year, the Milwaukee Road discontinued its Chicago-

Seattle-Tacoma *Olympian Hiawatha*. (This is included all passenger service west of Deer Lodge, Montana; The Milwaukee actually operated a daily train on the *Olympian Hiawatha* schedule between Minneapolis and Deer Lodge until 1964.) This was not a surprise, since its running mate the *Columbian* had expired only six years previous. The *Olympian Hiawatha* suffered from many shortcomings. Its equipment was considered inferior to the Budd-built cars of the GN and NP; it lacked section serving Portland and its Southern Pacific connections to/from California, and had no feeder lines of its own worthy of passenger service. Even in Seattle where it served Union Station, it didn't always make palatable connections to GN trains to Vancouver, BC or pool trains (GN-NP-UP) to Portland from adjacent King Street Station. In its last entry in the Official Guide, the only connections shown for the train west of the Twin Cities were an undocumented bus service to Great Falls from Roundup, and a connection to Yellowstone Park from Three Forks that required a four hour bus ride (to the NP-sponsored Old Faithful Inn). The return bus trip to Three Forks was even more inconvenient; it required an overnight stay in Bozeman! In reality, west of South Dakota, the Milwaukee served very few places that the NP didn't serve better. By the year of its demise, the westbound schedule of the *Olympian Hiawatha* had sagged to a running time only 25 minutes faster than the *North Coast Limited* and its much longer route, and over 2 hours longer than the *Empire Builder*. The discontinuances of the *Columbian* and *Olympian Hiawatha*, more than anything, highlighted the fact that there were simply too many passenger trains between Minneapolis/St. Paul and the Pacific Northwest – and in close geographic proximity nonetheless.

History also shows that the Milwaukee Road did a very poor job when it came to investing in infrastructure to handle passengers. One example is its service to Spokane. Spokane wasn't on the Milwaukee's main line, which actually ran south via Rosalia and Malden. To reach Spokane, Milwaukee's passenger trains on the transcontinental main line operated from Plummer to Marengo on what was largely trackage rights on the Union Pacific. The Milwaukee paid UP to place automatic block signals (ABS) on this portion of the route for the operation of the passenger trains, while their main line (through Malden) – except for a short distance west of Plummer – remained “dark” territory until the railroad's demise in 1980.

Some proponents of the Milwaukee's Pacific Extension have gone as far as to claim that the Milwaukee Road was simply being “prescient” in discontinuing its transcontinental passenger trains much earlier than was the case for other railroads, as that would be the fate of most eventually, and that the Milwaukee was still serving Tacoma and Seattle because UP's *City of Portland* operated over the Milwaukee Road from Chicago to Omaha (1955 to 1971). As ridiculous as these claims are (especially considering that UP ended through cars off the *City of Portland* before the *Olympia Hiawatha* was discontinued), they do bring to mind one of the great blunders in the history of American passenger railroading: Taking over the operating of UP's *Cities Streamliners* (from C&NW) between Chicago and Omaha.

The Milwaukee did not correspondingly discontinue many other passenger trains proactively as was suggested with the abolishment of the *Olympian Hiawatha*. The Milwaukee continued to field passenger trains to such outposts as Aberdeen, South Dakota, Channing, Michigan, and Wausau, Wisconsin well into the late 1960s and early 1970s. More importantly, when the Milwaukee took over the operation of UP's *Cities* streamliners between Chicago and Omaha in 1955 (consisting of the *City of Los Angeles*, *Challenger*, *City of San Francisco*, *City of Denver*, and *City of Portland*, which were steadily consolidated over the years and were one combined train when discontinued on Amtrak day, 1971) the anticipation was that with them would come reciprocal freight traffic from the UP which never materialized. But, the Milwaukee ended up

spending a huge amount of money to upgrade its Chicago-Omaha main line with CTC or an additional main track, while the Pacific Extension continued to do without. The Milwaukee even had the added expense of adding clerks in Chicago to handle reservations on the UP *Cities* trains! The Milwaukee operated the *Cities* trains (often with multiple frequencies) for sixteen years before succumbing to Amtrak. When the Milwaukee discontinued the Olympian Hiawatha in 1961, it did end service to Spokane, Seattle, and Tacoma, but the Milwaukee continued to run shortened version of the train from Minneapolis to Deer Lodge, Montana for another three years. So, while no passenger service west of Deer Lodge did reduce passenger train miles (one way) by 665 miles daily, this was more than offset by the additional 976 passenger train miles operated daily by the combined *City of Los Angeles/ City of San Francisco* and combined *City of Portland/ City of Denver* (they had already been combined by then) operating between Chicago and Omaha (not to mention also the Chicago-Omaha *Arrow* on the same route). Today, the Milwaukee Road across Iowa is largely abandoned - much like the Pacific Extension - and the ex-C&NW main line - void of the *Cities* streamliners since 1955 - is UP's busy access to Chicago, a continuation of its famed "Overland" route. All things considered, the savings gained by the discontinuance of the *Olympian Hiawatha* paled in comparison with the huge amount spent to lure the *Cities* streamliners from C&NW, which proved to be a very poor investment indeed.

Railroad-built hostelries: No comparison of passenger service across the "Northern Tier" would be complete without mentioning one of the legacies of Western American (and Canadian) Railroading: Railroad-built hotels. Through the first part of the 20th century, it was commonplace for railroad to construct elaborate hotels in and near major tourist areas (most often national parks) to lure passengers onto passenger trains provided by (at the time) the newly-constructed railroads.

No other American railroad has left a greater legacy in this regard than did the Great Northern. While some of its smaller hostelries ceased to operate during the years of World War II and before, what remains today is the greatest collection of railroad-built hostelries still in use in the United States.

As Christine Barnes states in her book *Great Lodges of the National Parks*, "Glacier National Park and the Great Northern Railway creations in and bordering the park are interconnected as rails at a switching station. In the majesty of the Montana's Rocky Mountains are historic alpine hotels and chalets connected by trail, boat, and road systems that remain as links to the past." Indeed, her book discusses the history of 17 individual hotels and chalets across the American West, and 7 of them are in and around Glacier National Park:

1. Glacier Park Lodge
2. Belton Chalets
3. Lake McDonald Lodge (not built by GN, but later owned by the railroad)
4. Many Glacier Hotel
5. Sperry Chalet
6. Granite Park Chalet
7. Prince of Wales Hotel (in adjacent Waterton Lakes National Park, Alberta).

The book goes on to state, "All the more unusual is the ability of visitors to approach Glacier via train. Amtrak's *Empire Builder* still delivers passengers to East Glacier Park Station (Glacier Park Lodge), Essex (Izaak Walton Inn), and Belton Station (West Glacier, Belton Chalet and Lake McDonald Lodge), coaxing even the most seasoned traveler back in time. 'Time Travel' is one element that makes Glacier such an extraordinary experience."

Indeed, the connection between the railroad and Glacier National Park is extraordinary. Unlike Yellowstone National Park, which was created well before the arrival of any of the railroad that touted serving it, the Great Northern lobbied for the creation of Glacier National Park, and then was the primary driver in creating the infrastructure in and around the park that made visitation possible. In fact, Louis Hill, son of “Empire Builder” James J. Hill, was so dedicated to promoting and developing Glacier National Park that he temporarily stepped down from the presidency of the Great Northern to supervise the projects planned for the park. “The work is so important that I am loath to intrust the development to anybody but myself,” Hill stated. For this reason, no other western national park is and was so tied to a railroad as is the case with Glacier National Park.

Hill’s influence in national parks extended beyond Glacier Park to adjacent Waterton Lakes National Park in Alberta, Canada. With the creation of the Prince of Wales Hotel in 1927, the Great Northern was established in the backyard of longtime rival Canadian Pacific. Today, this iconic structure continues to loom high on a bluff over Waterton townsite and the marina where (during summer tourist season) the boat M.V. *International* (also built for the Great Northern Railway) still shuttles visitors back and forth to Gothaunt, Montana (as one of the guides will explain: “America’s least-busy international port!”) for a fantastically scenic tour of Upper Waterton Lake.

Waterton Lakes (created in 1895) and Glacier (created in 1910) collectively became known as Waterton-Glacier International Peace Park in 1932, an ongoing symbol of the friendly relationship between Canada and the United States along the world’s longest unguarded border. Waterton-Glacier has always been oriented more toward the well-known Canadian parks at Banff and Jasper (and featuring the same type of fantastic scenery) than Yellowstone and Grand Teton. Great Northern even teamed up with Canadian Pacific to create single tours to both Waterton-Glacier, Banff, and Jasper, something that continues to this day.

Participation in development of a national park was markedly different for the Northern Pacific and Milwaukee Road in Yellowstone. Northern Pacific actively promoted visitation to the park, which was created 10 years prior to the arrival of the railroad (at Livingston, Montana). Unlike Glacier, which was on the Great Northern’s “transcontinental” main line, tourists using the NP to Yellowstone arrived in Gardiner, Montana via a 50+ mile branch from the main line at Livingston. After the early 1950s, this was replaced by a Northern Pacific Transport (NPT) bus. The iconic Old Faithful Inn (the lone Yellowstone Park entry in the *Great Lodges of the National Parks* book) in Yellowstone National Park was a whopping 113-mile multiple-vehicle bus ride from the railhead at Livingston. To promote travel to the park, NP built some early tent compounds and hotels in the late 1890s through its subsidiary, the Yellowstone Park Association. NP sold its interest in the Yellowstone Park Association in 1901 to the owners of the Yellowstone Transportation Company which went on to build the Old Faithful Inn with financial help from the NP. The Old Faithful Inn is the only Yellowstone hostelry to be featured in the book *Great Lodges of the National Parks*, and indeed specific influence by the Northern Pacific thereafter is minimal. While reference to the Great Northern Railway is hard to miss when visiting the hotels and chalets in and around Waterton-Glacier International Peace Park, any reference to the role of railroads in Yellowstone is subtle at best, with the most obvious still visible example being the ex-Union Pacific station in West Yellowstone, now a visitors center. There, some of the history of the FIVE railroads (UP, NP, CB&Q, MILW and C&NW) that claimed to serve Yellowstone is documented. The utility of these carriers was limited due to the

park's proximity; UP, NP, and CB&Q all accessed the park via branch lines; the MILW and C&NW were simply just too far away to be considered players in the park's tourist trade. While UP and NP by far handled the greatest number of tourists-by-rail, their visibility today and historic legacy in the park is highly limited.

The Milwaukee Road created a notable hotel, the Gallatin Gateway Inn, in its futile attempt to access the Yellowstone Park tourist trade. Not surprising, this structure is not mentioned in *Great Lodges of the National Parks*. Twenty-Seven years after the creation of Yellowstone National Park, the Milwaukee Road completed its "transcontinental" rail line. Its closest station to the park was Three Forks, Montana, about 100 miles from the park, and without a direct road at the time.

The Gallatin Gateway Inn, completed in 1927 at a cost of over one-quarter million dollars and accessed by a Milwaukee Road branch line (former Gallatin Valley railroad trackage) 32 miles from Three Forks. But even Gallatin Gateway was hardly a gateway to Yellowstone; it was still 77 miles to West Yellowstone over poor roads! Tourists through Gallatin Gateway rode buses that stopped at the Union Pacific station in West Yellowstone for lunch (and bathroom break) before continuing to the Old Faithful Inn (financed partially by the Northern Pacific) for the evening. Due to this cumbersome routing, only 8% of the visitors that arrived by rail during the peak (for tourists by train) year of 1928 used the Milwaukee Road. Thereafter, rail passenger traffic continued to decline as did the number of visitors to the Gallatin Gateway Inn. By the time the Milwaukee Road ended passenger service to Three Forks in 1964, the inn was in private hands. The Inn was renovated in the 1980s, and remained open until 2013. It is currently (2016) used as housing for employees working in the Big Sky area, not for its original purpose.

While most the hotels and chalets of the Western U.S. were never exceptionally profitable (and indeed often became a burden on the railroads due to the short tourist seasons), many, such as those in Waterton-Glacier and the Old Faithful Inn survive due to the value they yet provide. Historically and culturally – and largely due to their location – they survive almost as important as the national parks in their presence. The demise of the Gallatin Gateway Inn today is testimony to its poor location and overall lack of utility since its inception.

Much in the way that the streamlined *Western Star* supported the *Empire Builder* with regard to ridership along GN's transcontinental route, so did most other GN passenger trains, something that could not be said about competitors Milwaukee Road (west of the Twin Cities) and Northern Pacific. While clearly the GN was the leader in "transcontinental" rail passenger service across America's Northern Tier, it also had the superior service on every other route (with the possible exception of one). What follows is a synopsis of how that other service benefited GN's transcontinental trains in the year 1961, ten years before the start of Amtrak:

Only in the pool (GN-NP-UP) operation between Seattle and Portland did Great Northern not offer the superlative service. Each railroad fielded one train per day each way (with UP trains arriving and departing from Seattle Union Station where as GN and NP trains used adjacent King Street). NP and UP trains featured dining service and conveyed through sleeping cars to and from Seattle off Southern Pacific's *Cascade* train (from the San Francisco area). By 1961, the GN train was a coach only affair with minimal food service offered by "Train Sales Service." All three trains provided various connections at Seattle and Portland; the GN and NP trains were scheduled so their equipment could make a roundtrip daily from Seattle; the UP train made a roundtrip daily from Portland. The trains were mostly scheduled to provide connecting service with SP trains for California and UP trains to the east from Portland as well as to GN trains at

Seattle to Vancouver, BC. The Milwaukee Road did not serve Portland, the Northwest's second-largest metro area, even with freight service.

While the GN, NP, and UP "pooled" service between Seattle and Portland (the route was largely NP, with the other roads receiving full trackage rights), the north end of the "corridor" between Seattle and Vancouver, BC belonged to Great Northern alone (route of the *Internationals*). These trains connected with pool trains to Portland, but more importantly for the Great Northern, lured passengers to GN transcontinental trains at Seattle and Everett. While the *Internationals* used King Street Station at Seattle as did NP trains, connections to NP trains were not as convenient. Sometimes as an example, the northbound morning *International* would connect with the westbound *Empire Builder*, but not always the westbound *North Coast Limited*. Southbound passengers from Vancouver, BC traveling to the American Midwest could transfer from the afternoon *International* to the eastbound *Empire Builder* at Everett with less than an hour layover, but the same train would not arrive in Seattle until well after the *North Coast Limited* had departed (GN did provide a morning *International* out of Vancouver, BC to Seattle that would allow a connection to the *North Coast Limited*, but with a long layover). And while the GN did not provide dining car service on its *Internationals*, they did achieve the "streamliner" status, and offered parlor car seats and lounge facilities, and even the ability to clear customs and immigration on board the train as it crossed the international border.

Passengers riding the GN and NP to/from east of Spokane rode the GN and NP subsidiary Spokane, Portland, and Seattle, jointly owned by both railroads. In the streamlined era, passengers from the *Western Star* and *Mainstreeter* were handled by SP&S trains 3 and 4 between Spokane or Pasco and Portland; after the *North Coast Limited* was "speeded up" in 1952, passengers from the *Empire Builder* and *North Coast Limited* were handled by SP&S trains 1 and 2. In many cases, until toward the end of the railroad-operated passenger service (Amtrak), through cars were operated from GN and NP trains to Portland. Westbound, SP&S trains would depart from the GN station in Spokane, and pick up cars off the NP trains in Pasco and then continue to Portland, with a reverse move eastbound. Through cars to and from Portland were always operated off the *Empire Builder* and *North Coast Limited*. The *Western Star* offered through coach(es) and a sleeper into the mid-1960s (sometimes only seasonally). This was especially interesting after the 1960 schedule change for the *Western Star* which put the train into Spokane in mid-afternoon instead of mid-evening, because SP&S train 3 still did not leave until evening to make a connection with the NP *Mainstreeter* at Pasco (and to accommodate mail). Yet, even then, the GN still offered a through sleeper to Portland with the long layover in Spokane! The *Mainstreeter* did occasionally offer through coach service to Portland via SP&S, but never through sleeping cars. Interestingly, however, in the late 1950s and early 1960s, NP entries in the Official Guide did show sleeping car service between Spokane and Portland. One example: "Spokane to Portland – Sleeper, 4 Sections, 4 Double Bedrooms, 8 Duplex Roomettes. (Car 271) (Via SP&S Ry.) At Spokane through passengers make station to station taxicab transfer." This was, of course, line number and all, the Chicago-Portland sleeper from Great Northern's *Western Star*! No mention of it being GN equipment or that the transfer was to the GN station in the NP listing (not a surprise, really for the railroad who couldn't bear to admit that it used the Great Northern Station in Minneapolis, its largest online city; the NP sheepishly called it the "Hennepin Avenue Station" for its address at 2 Hennepin Avenue!). Perhaps more than once a passenger who rode out of Eastern North Dakota or Minnesota on the *Mainstreeter* who wanted sleeping car space for the overnight trip to Portland from Spokane said to him/herself, "Next time, I'll just save the hassle of a transfer, and go all the way on Great Northern!"

Other than the “corridor” between Vancouver, BC and Portland, by 1961 GN and NP provided little other passenger service in Washington State besides their “transcontinental” trains. Both the GN and NP once provided all-stop daytime passenger trains between Seattle and Spokane. Both had been discontinued by 1961, with the NP version surviving about a year longer. GN also provided six-days-per-week sleeping car service between Seattle and Spokane until the mid-1960s (westbound on the *Empire Builder*, eastbound on the *Western Star*). NP still ran a Budd Car (RDC) from Spokane to Lewiston, ID, but its value drawing passengers to connect with transcontinental trains was minimal. The northward train connected with the eastbound *North Coast Limited* in Spokane, but otherwise the trains were scheduled to connect with the *Mainstreeter* to and from Seattle, which meant a 15+ hour trip from Seattle to Lewiston. Even without the Interstate highways in place, the bus could do it in about 5 hours less.

In Montana, NP operated no passenger trains other than the *North Coast Limited* and *Mainstreeter*. Between Garrison and Logan, the *North Coast Limited* operated via Butte, and the *Mainstreeter* through Helena. Buses were operated between Garrison and Logan to connect the *North Coast Limited* with Helena and to connect the *Mainstreeter* with Butte. NP did enjoy connections to other railroads in Montana, however. The best one was the connection between UP’s *Butte Special* in Butte to the *North Coast Limited* (in both directions), that would allow trips such as Salt Lake City to Billings.

In Billings, by 1961 CB&Q was still running trains to Lincoln, NE and Denver. Unfortunately, connections to and from NP trains were poor, except from the eastbound *North Coast Limited* to CB&Q 30 for Denver at 24 minutes, which was really too close. It should also be noted that the lack of amenities and slow schedules (these were not *Zephyrs*) of the CB&Q trains didn’t do much to foster connecting traffic.

Other than a handful of local services in Montana and South Dakota, connections to Milwaukee Road’s Northern Tier trains were sparse (and in addition, unlike GN and NP, and UP, didn’t offer service to Portland its important Southern Pacific connections to California). Indeed, after the *Columbian* was discontinued, the *Olympian Hiawatha* was the Milwaukee’s “stand alone” service west of Aberdeen, South Dakota with no advertised rail connections. The discontinuance of the *Columbian* resulted in additional stops to be added to the *Olympian Hiawatha*, causing its schedule to be lengthened significantly, and in May of 1961 the train was discontinued, replaced by a Minneapolis-Deer Lodge stub train that lasted until 1964.

Great Northern’s non-transcontinental Montana passenger train service in 1961 revolved around service to Great Falls. Trains 3 and 4 between Havre, Great Falls and Shelby provided connections and through cars (a St. Paul-Great Falls sleeping car and St. Paul-Shelby coach) at Havre connecting to the *Western Star* to/from the east. Train 3 inbound at Shelby provided a connection to the eastbound *Empire Builder* there, as it turned back as train 4 for Great Falls. Trains 3 and 4 between Havre and Shelby via Great Falls replaced the *Western Star* when it was rerouted to operate on the mainline via Chester in 1960.

Another interesting connecting train still operating in 1961 was Great Northern’s lone Budd Car, RDC 2350, which operated daily except Sunday between Great Falls, Helena, and Butte (train 235 Great Falls to Butte, returning to Great Falls as train 236). This train connected with trains 3 and 4 at Great Falls for travel to/from Havre and east. Travel time between St. Paul and Helena via GN trains 27/3/235 (*Western Star* and connections) was 25 hours, 53 minutes; this was 3

hours faster than the NP offered on their direct train, the *Mainstreeter*. Eastbound, GN trains 236/4/28 were only 82 minutes faster than the *Mainstreeter* due to longer layover time in Great Falls. GN's RDC service even allowed a faster St. Paul-Butte travel times (50 minutes westbound and 30 minutes faster eastbound) than riding the *Mainstreeter* to/from Logan, and the connecting NPT bus to/from Butte. The NP *North Coast Limited* was 5.5 hours faster than GN's *Western Star* connection between St. Paul and Butte, but GN could still claim the fastest all-rail service between the Twin Cities and Helena, and that it offered competitive service to NP even over 200 miles off the main line!

GN and NP also operated their own bus services in the state of Montana to connect with passenger trains. GN's primary service was between Whitefish and Kalispell (connecting with all trains) and an *Empire Builder* connection at Havre to Great Falls. Additionally, GN operated a bus between Williston and Scobey which connected with the *Empire Builder* in Williston. This was in addition to a mixed train service on the same route which continued west of Scobey to Opheim. (Interestingly, The Williston-Scobey bus survived into the Amtrak era, even appearing in the Burlington Northern version of the Amtrak timetable, and the mixed train survived into the BN era until Amtrak Day, 1971!)

NP also operated buses in Montana, the most important of which connected with passenger trains at Livingston to run to the northern gateway town for Yellowstone National Park at Gardiner. Bus service out of Glendive to Sidney and Circle/Brockway connected with the *North Coast Limited*. There were other services, such as out of Butte to Whitehall, Virginia City, and Ennis, which were more oriented toward local travel rather than connections with passenger trains.

But it was in North Dakota and Minnesota where Great Northern's passenger service most clearly dominated the competition (including Soo Line). The extent of Milwaukee Road service west of Minneapolis in 1961 was the *Olympian Hiawatha* or its Deer Lodge stub train (mostly operating through South Dakota rather than North Dakota).

Other than the *North Coast Limited* and *Mainstreeter*, NP operated one supplemental train on its main line across Minnesota and North Dakota, trains 3 and 4, the St. Paul-Mandan all-stop coach-only remnant of the *Alaskan*, which was the slowest of all passenger trains between the Twin Cities and Fargo. NP offered passenger service between Grand Forks and the Twin Cities via its Fargo-Winnipeg train, a rail diesel car that required a change of trains in Hawley, Minnesota.

Great Northern had two routes between the Twin Cities and Fargo (via Willmar or St. Cloud) and between Fargo and Minot (via Grand Forks or New Rockford). Three trains operated on each route between St. Paul and Fargo; two trains operated on each route between Fargo and Minot. All the trains, with the exception of the *Dakotan* (via Willmar and Grand Forks) offered meal service; additionally, GN's *Winnipeg Limited* (between St. Paul and Grand Forks to/from Winnipeg) had sleeping car service, including a St. Paul-Grand Forks only setout sleeper.

Here are the departures of eastbound passenger trains at Fargo in September of 1961 and their running time to Minneapolis Great Northern Station:

GN:

115 AM train 32, Empire Builder, 5 hours

141 AM train 8, Winnipeg Limited, 5 hours 29 minutes

800 AM train 12, Red River Streamliner, 4 hours 35 minutes

1035 AM train 28, *Western Star*, 4 hours 35 minutes
320 PM train 4, officially unnamed (the "Stub"), 4 hours 41 minutes
355 PM train 14, *Dakotan*, 5 hours 15 minutes.

NP:

147 AM train 26, *North Coast Limited*, 4 hours, 23 minutes
425 PM train 2, *Mainstreeter*, 5 hours, 22 minutes.
850 PM train 4, unnamed, 7 hours, 10 minutes.

The fastest train was NP's *North Coast Limited*, but it also had the fewest stops (1), as well as the least amount of schedule padding (see below). But of the 9 trains operated by the two carriers, NP also had the two slowest. In short distances, speed tends to be more important than overnight or longer trips, hence the advantage for GN trains. Additionally, GN trains offered more amenities and a greater variety of departure times. GN's *Red River Streamliner* allowed a decent departure time from Fargo that still got the traveler to Minneapolis by the lunch hour; The *Western Star* allowed Fargoans to leave in mid-morning and still reach Chicago that evening via CB&Q's *Afternoon Zephyr*.

Part of the service on the transcontinental routes of both the GN and NP was their service between the Twin Cities and Winnipeg, which was also offered by Soo Line. GN (the *Winnipeg Limited*) and Soo Line (the *Winnipeg*) trains operated overnight. The unnamed NP service was really a Fargo-Winnipeg Rail Diesel Car (RDC) that connected with the *Mainstreeter* (no through cars by this time) at Manitoba Jct. None of the trains were that speedy; the NP service was a day trip, the GN and Soo Line were overnight trains and had sleeping cars. Only Great Northern provided any kind of food service (though the *Mainstreeter*, which was the NP's connection to their Winnipeg service did offer meal, lounge, and sleeping car amenities between St. Paul and Manitoba Jct.).

Northern Pacific operated a coach only conveyance between Little Falls and International Falls via Bemidji that connected with trains 3 and 4 in Little Falls. The Southbound train (and connection) averaged just less than 30 MPH on its all-stop trip from International Falls to St. Paul. There was no other competing rail service in the area, but bus service was much faster.

NP also operated connections to the *North Coast Limited* and *Mainstreeter* at Staples for Superior and Duluth. This allowed patrons from the Twin Ports to travel directly west rather than first go to Minneapolis as was the case with GN. But the trains were (again) Rail Diesel Cars, and the nocturnal times for the *North Coast Limited* at Staples may have caused many passengers to use Minneapolis or St. Paul as a transfer point as it was. Still, NP offered by far the fastest Duluth-Fargo trips, but trip from Seattle to Duluth via GN's *Western Star* to Minneapolis and the *Gopher* to Duluth was still faster than NP's *Mainstreeter* and its Budd Car connection at Staples.

Between the Minneapolis/St. Paul and Duluth/Superior was another "pool"-type operation that once included Soo Line. By late 1961, Soo Line's train had been discontinued and NP operated but one train, the coach-only *Twin Ports-Twin City Express* (I always wondered if this was a typo in the Official Guide in that it should have been Twin Cities instead?) GN operated two roundtrips daily, and again, provided the best service.

NP always had a big disadvantage in this lane. Both GN and NP had their coach yards

(passenger service facilities) in St. Paul. NP's line to Duluth operated north from St. Paul and GN's north from Minneapolis. Therefore, GN trains for Duluth originated in St. Paul, operated through Minneapolis (the major city of the Twin Cities) and on to Duluth. NP equipment needed to be deadheaded to/from St. Paul to facilitate their Duluth train originating and terminating in Minneapolis. Additionally, the NP Minneapolis-Duluth trains needed to back in or out of St. Paul Union Depot because they basically arrived and departed from the same direction. This resulted in NP train 65 needing 4 hours and 40 minutes run from Duluth to Minneapolis. GN's all-stop *Badger* did it only 3 hours, 35 minutes, and the GN Gopher in 2 hours, 50 minutes. Northbound was even a greater time advantage to Great Northern. Prior to this time when NP actually ran a second train on the route, it originated and terminated in St. Paul, with service to Minneapolis via a connecting train.

GN service between the Twin Cities and Twin Ports were the appropriately-named *Gopher* and *Badger*. While no dining car service was offered for such a short trip, the standard "Sandwiches and refreshments (were offered) by train sales service" and the *Gopher* had a Parlor car for first class travel. The Gopher's 2 hours, 45 minutes timing between Minneapolis and Duluth was 75 minutes faster than Greyhound's "Express" bus.

The *Gopher* and *Badger* were the trains GN patrons used to travel to and from the "transcontinental" *Empire Builder* and *Western Star* traveling west of the Twin Cities. Given the amenities offered on Great Northern trains compared to the NP and their faster running times, many passengers riding the *North Coast Limited* opted to travel to/from Minneapolis and transfer to/from GN trains to reach the Twin Ports rather than endure a middle-of-the-night transfer involving a Rail Diesel Car on NP at Staples. And if the passenger's destination was a point served by both the GN and NP, they might have indeed just elected to simply make that trip on one railroad: Great Northern.

By 1961, 10 years after GN started running two streamliners from the Twin Cities to the Pacific Northwest, GN's connecting services be it from Vancouver, BC and Duluth directed passengers toward GN's transcontinental trains; GN's large number of secondary passenger trains on its main lines in Minnesota and North Dakota, most with all necessary passenger amenities, made GN the railroad most considered first with regard to shorter distance rail travel in the area. Thus, the reinforcement of Great Northern as the premier rail passenger service provider between the Upper Midwest and Pacific Northwest, built on the backs of its streamlined *Empire Builder* and *Western Star*.

1967 was an important year in the history of America's passenger trains when the Postal Service announced that most of RPO (Railway Post Office) contracts would be canceled with railroad and that mail would move by truck and air. Since in many cases this mail contract had been subsidizing the passenger trains which carried the RPOs, losses associated with operating passenger trains skyrocketed.

Between 1961 and 1967, passenger service in the northern tier changed overall very little. Milwaukee Road's passenger service west of Aberdeen South Dakota ended in 1964. Great Northern discontinued the *Dakotan* between St. Paul and Minot (but its name was later assigned to trains 3 and 4). NP discontinued its Spokane-Lewiston RDC trip, as well as the RDC which connected Duluth with the *Mainstreeter* at Staples. The one remaining train between Minneapolis and Duluth also was dropped. Great Northern ended sleeping car service to Great

Falls as well as the St. Paul-Grand Forks sleeper on the Winnipeg Limited. Northern Pacific replaced its sleeping car on the *Mainstreeter* with a Slumbercoach in 1964.

Equipment listings from a July 1967 Official Guide are of interest. By this time, so many NP trains were coach-only, that train equipment listings were reduced to one-half of one page of the Guide, listing specific equipment only for the *North Coast Limited*, *Mainstreeter*, and Seattle-Portland “pool” trains (of all three participating railroads), with the additional notation, “Trains not shown carry coach equipment only.”

This is the actual breakdown of the trains operated by GN and NP in summer, 1967:

Great Northern	Northern Pacific
<p>Empire Builder: Coach 100-200 Chicago-Seattle, 60 Seats Dome Coach 101-201 Chicago-Seattle, 46 Seats, Leg Rests Dome Coach 102-202 Chicago-Seattle, 46 Seats, Leg Rests Coach 103-203 St. Paul-Seattle, 48 Seats, Leg Rests Coach 104-204 St. Paul-Portland, 48 Seats, Leg Rests Dome Coach 105-205 Chicago-Portland, 48 Seats, Leg Rests Coach Spokane-Portland (SP&S) 56 Seats Ranch-Lounge (Meals) Chicago-Seattle, lounge car coach psgrs Dining Car Chicago-Seattle-Portland Pullman Sleeping Car 312-322 Chicago-Portland Pullman Sleeping Car 314-324 Chicago-Seattle Pullman Sleeping Car 315-325 Chicago-Seattle Pullman Sleeping Car 316-326 Chicago-Seattle Sleeping Car/Buffer 10-20 Spokane-Portland Great Dome Full Length Lounge Car Chicago-Seattle</p>	<p>North Coast Limited: Dome “Lounge-in-the-sky” Buffet-sleeper Vista-Dome sleeping cars Standard sleeping cars Slumber Coach – may be purchased with a coach ticket Vista-Dome coaches Reclining Seat day-nite coaches Travellers Rest Car – Buffet-Lounge Dining Car – serving all meals</p>
<p>Western Star Reclining Seat Coach Chicago-St. Paul-Seattle, 60 Seats Day-Nite Reclining Seat Coach, St. Paul-Seattle, 48 Seats Day-Nite Reclining Seat Coach, Chicago-Seattle, 48 Seats Coach St. Paul-Great Falls, 48 Seats Coffee Shop Car St. Paul-Seattle (June 10-September 12) Dining Car St. Paul-Seattle Pullman Sleeping Car 274-284 Chicago-Seattle (June 18-September 4) Pullman Sleeping Car 273-283 Chicago-Seattle DeLuxe Lounge Observation St. Paul-Seattle (June 10-September 12)</p>	<p>Mainstreeter: Slumber Coach – may be purchased with a coach ticket Reclining Seat Coaches Dining Car Service – all meals and beverages.</p>
<p>Seattle-Portland Pool Service Trains 407 and 408 (NP): Reclining Seat Coaches, Seattle-Portland Dining Car, Seattle-Portland Parlor-Bar-Lounge 4070-4080 Seattle-Portland, 24 Parlor Seats Trains 457 and 458 (UP): Reclining Seat Coaches, Seattle-Portland Dining Car, Seattle-Portland Lounge, Seattle-Portland Trains 459 and 460 (GN): Reclining Seat Coaches, Seattle-Portland (Sandwiches and refreshments by train sales service)</p>	<p>Seattle-Portland Pool Service Trains 407 and 408 (NP): Parlor-lounge car Reclining Seat Coaches Economy Buffet Car Trains 457 and 458 (UP): Dining Car and Reclining Seat Coaches Trains 459 and 460 (GN): Reclining Seat Coaches Trains not shown carry coach equipment only</p>
<p>Seattle-Vancouver, BC Streamlined International, trains 357-358 Seattle-Vancouver Luxury Coaches (Sandwiches and refreshments by train sales service.) Parlor Lounge Car 3580-3570 Seattle-Vancouver, 29 seats, 1 bedroom Streamlined International, trains 359-360 Seattle-Vancouver Luxury Coaches (Sandwiches and refreshments by train sales service.) Parlor Lounge Car 3590-3600 Seattle-Vancouver, 29 seats, 1 bedroom</p>	<p>Seattle-Vancouver, BC Didn't serve Vancouver, BC</p>
<p>Other service, Montana Trains 3 and 4, Havre-Great Falls Reclining Seat Coach St. Paul-Havre-Great Falls</p>	<p>Other service, Montana None</p>
<p>Winnipeg Limited, St. Paul-Winnipeg Day-Nite Reclining Seat Coaches Snack-Bar-Coach Table Seating (Sandwiches-Beverage service) Pullman Sleeping Car 73-83 St. Paul-Winnipeg</p>	<p>Trains 124/13-14/123, Fargo-Winnipeg Trains not shown carry coach equipment only. (Rail Diesel Car)</p>

Pullman Sleeping Car 74-84 St. Paul-Winnipeg	
<p>Service to Duluth/Superior Gopher, trains 19-20, St. Paul-Minneapolis-Superior-Duluth Reclining Seat Coaches (Sandwiches and refreshments by train sales service.) Parlor-Buffer Car 203-193 St. Paul-Duluth 26 parlor car seats Badger, trains 23-24, St. Paul-Minneapolis-Superior-Duluth Reclining Seat Coaches (Sandwiches and refreshments by train sales service.)</p>	<p>Service to Duluth/Superior Trains 57-58 Duluth-Staples (Rail Diesel Car), Trains not shown carry coach equipment only.</p>
<p>Other service St. Paul-North Dakota Dakotan, trains 3-4, St. Paul-Fargo-Grand Forks-Minot Reclining Seat Coaches Café-Diner-Coach Red River Streamliner, trains 11-14, St. Paul-Minneapolis-Fargo Reclining Seat Coaches Café-Diner-Coach</p>	<p>Other service St. Paul-North Dakota Trains 3-4 St. Paul-Fargo-Jamestown. Trains not shown carry coach equipment only.</p>
<p>Other Minnesota Service None</p>	<p>Other Minnesota Service Trains 11-12, Little Falls-International Falls. Trains not shown carry coach equipment only.</p>

1967 is yet another year that highlights that GN clearly provided the superior service in nearly all lanes. The equipment listing for the *North Coast Limited* did not break the train down by specific car or line number as did the GN for the *Empire Builder*, and it should not be assumed that the *North Coast Limited* was inferior to the *Empire Builder*, simply because its equipment listing was “shorter.”

Most railroads had a “flagship train” that offered exemplary service, but to best gauge overall service offered, the other trains need to be considered. This equipment listing from July 1967 is a good example. As has continued to be the case in the streamlined era, the only route where NP provided service superior to that of Great Northern was between Seattle and Portland. (And it is also interesting to consider that since the Seattle-Portland route was mostly NP’s railroad, it as a rule never provided additional trains, just the same number as competitors that had trackage rights on it.)

1967 was the last year that the *Western Star* (because the *Empire Builder* didn’t stop) exclusively served GN’s Glacier Park stations, and was the last year that it really could carry the moniker “streamliner.” The train continued to handle multiple sleeping cars, with two food-service cars and a lounge. This is in stark contrast to the *Mainstreeter*’s slumbercoach and dining lounge car, which often only operated between St. Paul and Pasco or Spokane (not to/from Seattle). As a presenter at the 2015 GNRHS convention, a one-time passenger service representative for Great Northern stated, “Sorry NP fans, but the *Mainstreeter* was in no way comparable to the *Western Star!*”

Beyond that, the 1967 Guide showed that GN continued to field 5 trains per day between Fargo and St. Paul, all with meal service, and three with sleeping car service; NP had 3 trains, one with sleeping cars and one was coach-only. GN was providing the only service between Seattle and Vancouver, BC and between the Twin Cities and Twin Ports. The equipment listing indicates the continued lack of amenities provided by NP for its Winnipeg service, while GN continued to provide sleeping cars on its overnight *Winnipeg Limited*. (By this time, Soo Line’s *Winnipeg* had been discontinued.)

The 1967 Official Guide also indicates how the combining of the *Empire Builder* and *North Coast Limited* between St. Paul and Chicago on CB&Q had a negative impact on the schedules of both, but more so with the *Empire Builder*. In 1965 when both trains were operating as

separate entities all the way from Chicago to Seattle, the westbound *Empire Builder* was nearly 3 hours faster than the *North Coast Limited*. (Eastbound, the *Empire Builder* was only 80 minutes faster, owing to a desire to protect palatable arrival times at Minneapolis and St. Paul). Portland cars off both the *Empire Builder* and *North Coast Limited* operated on SP&S trains 1 and 2; therefore, the westbound *Empire Builder* could depart Chicago over 2 hours later than the *North Coast Limited*, and hand off its Portland cars to SP&S 1 at Spokane, which could then make a direct connection to the westbound *North Coast Limited* at Pasco to receive its Portland cars.

By 1967, with the *Empire Builder* and *North Coast Limited* combined between Chicago and St. Paul and Pasco and Portland, GN found itself in the position of needing to slow down the *Empire Builder* to accommodate the much-slower *North Coast Limited*. In 1965, GN train 31, separate from NP 25, operated from Chicago to Spokane in 34 hours, 45 minutes; to accommodate the consolidation in 1967, that running time increased 30 minutes. NP 25 had its schedule tightened by 15 minutes between Chicago and Spokane, and another 15 minutes between Spokane and Seattle. The westbound *North Coast Limited* always did have a short turnaround in Seattle after being “speeded up” in 1952, but by 1967, the equipment turnaround time was only 4 hours, 45 minutes! (845 AM to 130 PM). This, of course, was an untenable situation as late inbound trains usually resulted in late outbound trains (and the *Empire Builder* waiting for a tardy *North Coast Limited* on occasion in St. Paul). The next year, the eastbound *North Coast Limited* succumbed to operational reality when its departure time from Seattle was pushed back to 230 PM to allow a 5 hour, 45 minute turnaround time in Seattle. The later departure time from Seattle resulted in a later arrival time in St. Paul, and caused the *Empire Builder* schedule to be slowed even more. From a 1968 Official Guide:

	GN 32 <i>Empire Builder</i>	NP 26 <i>North Coast Limited</i>
Equipment dwell time from westbound train	7 hours, 15 minutes	5 hours, 45 minutes
Dp. Seattle	300 PM	230 PM
Ar. Spokane	1040 PM	1129 PM
Dp. Spokane	1110 PM	1144 PM
Ar. Fargo	1250 AM	227 AM
Dp. Fargo	100 AM	232 AM
Ar. Minneapolis	630 AM	700 AM
Ar. St. Paul	710 AM	730 AM
Dp. St. Paul	810 AM	810 AM
Ar. Chicago	255 PM	255 PM

Great Northern needed to depart the eastbound *Empire Builder* as it did to minimize the station dwell time in Spokane for passengers off SP&S train 2 from Portland (which needed to get to Pasco in time to make its *North Coast Limited* connection). In doing so, however, the train actually departed Spokane BEFORE the *North Coast Limited* (by 34 minutes!). This resulted in over an hour of schedule padding on the run to Whitefish to preserve a palatable 600 AM arrival time, and another hour of slack between Whitefish and Havre. Still, GN 32 gained over an hour on NP 25 by arrival at Fargo, which required a sluggish 5 hour, 30 minute run to Minneapolis – some 78 minutes more than its westbound counterpart – as not to, again, arrive there too early. (In reality, No. 32 often arrived at Minneapolis’s Great Northern station before 600 AM, being allowed 2 hours for the 91 mile run from Willmar!)

Before the advent of Amtrak, the schedule of the BN *Empire Builder* was again modified and speeded up about an hour between Seattle and Fargo:

	BN 32 <i>Empire Builder</i>	BN 26 <i>North Coast Limited</i>
Equipment dwell time from westbound train*	8 hours, 15 minutes	5 hours, 45 minutes
Dp. Seattle	345 PM	230 PM
Ar. Spokane	1110 PM	1129 PM
Dp. Spokane	1140 PM	1144 PM
Ar. Fargo	1225 AM	243 AM
Dp. Fargo	1238 AM	253 AM
Ar. Minneapolis	630 AM	710 AM
Ar. St. Paul	710 AM	750 AM
Dp. St. Paul	815 AM	815 AM
Ar. Chicago	315 PM	315 PM

*Since both trains were Burlington Northern, equipment could be interchangeable.

With this schedule, the *Empire Builder* departed Spokane only 4 minutes earlier than the *North Coast Limited*, but actually departed Fargo earlier than the last GN version of the train, which meant even slower running (2 hours 20 minutes for the Willmar-Minneapolis segment) into the Twin Cities and waiting for the *North Coast Limited*, which actually had additional padding added inbound St. Paul. All in all, it could be said that in the latter part of the 1960s to Amtrak Day in 1971, the *Empire Builder* schedule was hampered by its slowest common denominator: The *North Coast Limited*. (It should also be noted that as an Amtrak train, the *Empire Builder* was similarly impeded by a passenger train on the ex-NP main; After the *North Coast Limited* was discontinued on May 1, 1971 with the advent of Amtrak, a tri-weekly “experimental train” - that would later be known as the *North Coast Hiawatha* - was added just over a month later between Minneapolis and Spokane, combining with the *Empire Builder* - on the ex-GN main line - at these cities. In spite of the *Empire Builder* operating via Grand Forks instead of New Rockford - and requiring longer running time - the *Empire Builder*’s schedule was not lengthened to accommodate the stub train via the ex-NP which in some segments had a schedule even faster than the *North Coast Limited*. Again, the *Empire Builder* waited on numerous occasions for slower train on the ex-NP route. Amtrak corrected the situation in 1972 when the *North Coast Hiawatha* began operating as a separate train between Chicago and Minneapolis to accommodate the needed longer running time.)

While the declining patronage certainly was the greatest factor in Great Northern’s decision to have the *Empire Builder* begin stopping at Glacier Park Station and Belton (during the Glacier Park summer season) and handle the tourist sleepers (instead of the *Western Star*, as had been done previously), the padding of the *Empire Builder*’s schedule to accommodate meeting the *North Coast Limited* in Pasco and St. Paul was certainly a contributing factor. Clearly, any additional delay caused by picking up and setting out these cars could be easily made up due to the additional time in the schedule.

The *Western Star* had its last Hurrah! as a bona fide streamliner in the summer of 1967; thereafter it consisted of only coaches, a sleeping car, and either a diner-lounge car or the “Ranch” car (once on the *Empire Builder*) for food service, and was only nominally better than the *Mainstreeter* with its Slumbercoach and Economy Buffet car. Yet, the *Fast Mail* continued to live on with the *Western Star*; during the off season, while it sometimes had only four passenger-carrying cars (two coaches, diner-lounge, and sleeper), the train routinely was 15-20

cars bolstered by express and storage mail shipments that continued until a week before the creation of Amtrak.

Unlike the Great Northern which never petitioned to discontinue the *Western Star* due to its strong head-end revenue, Northern Pacific immediately sought the termination (at least west of Fargo) of the *Mainstreeter* when the Miles City-Spokane RPO contract was lost in August of 1967. In September of 1967, NP began offering Slumbercoach service only between Mandan and Helena and Spokane and Seattle, segments were the train operated overnight. This bolstered the case for opponents of the discontinuance to claim that NP was first trying to discourage ridership by downgrading service, and haunted them long after the cars again operated over the full length of the run again in 1968. Though by all accounts the equipment on the *Mainstreeter* in the last years of its life were satisfactory, especially considering the passenger load which was minimal, NP gained some notoriety as being anti-passenger train. This also was exacerbated by the negativity created (mostly in Southern Montana, and nearly exclusively by NP employees) by the anti-BN merger movement occurring at the same time.

Also in 1967 saw the end of NP trains 3 and 4 between St. Paul and Jamestown. Trains 11 and 12 between Little Falls and International Falls (which connected with trains 3 and 4 at Little Falls) became an RDC operation. Without trains 3 and 4, they had no immediate connection to the Twin Cities and were discontinued in 1968.

1968 saw the GN discontinue the *Red River*, and the *Dakotan* between Fargo and Minot, resulting in the *Western Star* being routed via Grand Forks instead of New Rockford. In 1969, GN discontinued one of the two *Streamlined Internationals* between Seattle and Vancouver, BC; Also in 1969, GN ended service between Superior and Duluth: The *Gopher* and *Badger* originated and terminated in Superior and passengers were bused in between. This left Northern Pacific's RDC connection to the *North Coast Limited* at Staples as the only passenger train serving Duluth Union Depot, which had contracts with operating railroads that the last carrier to serve the station would need to pay for its upkeep and disposition. Therefore, GN was able to push this cost to the NP in spite of it always having been the carrier handling the most passengers at the facility. In February 1970, just prior to the BN merger, GN discontinued the St. Paul-Fargo *Dakotan*, and the *Winnipeg Limited*, replacing the latter with a stub train from Grand Forks to Winnipeg connecting (in both directions) with the *Western Star* at Grand Forks.

1968 on the Northern Pacific, as stated earlier, saw the discontinuance of trains 11 and 12 between Little Falls and International Falls (being replaced with a bus). . With the loss of the mail contracts, the *Mainstreeter* had its running time reduced in 1968 to be even more competitive with that of the *Western Star* (and in doing so, gained an eastbound connection with CB&Q's *Afternoon Zephyr* in St. Paul for Chicago, but severed the Portland-Pasco connection from SP&S train 4). Unfortunately, the new eastbound schedule also severed the connection with the southbound Winnipeg-Fargo train 14-123; this train was then scheduled to operate later in the day and connect with the *North Coast Limited* in Fargo. The layover in Fargo was an ungodly 1210 AM to 232 AM. Due to this denigration of service, the Winnipeg-Fargo RDC succumbed to discontinuance shortly thereafter. By the time NP issued its last public timetable effective May 1, 1969, it operated only three passenger trains: The *North Coast Limited*, the *Mainstreeter*, and one Seattle-Portland pool train. These three trains continued to operate through the BN merger until Amtrak Day, 1971.

Great Northern, on the other hand, handed over eight passenger trains to Burlington Northern in March of 1970: The *Empire Builder*, the *Western Star*, the *Gopher* and the *Badger* (St. Paul-Superior), the Grand Forks-Winnipeg remnant of the *Winnipeg Limited*, the Havre-Great Falls connection to the *Western Star* (which by then was a Rail Diesel Car), one Seattle-Portland “pool” train, and one Seattle-Vancouver *International*. With the exception of the *Gopher* and *Badger* which were later combined into a single daily round trip, all of these trains continued to operate through to Amtrak Day, 1971.

A note about Rail Diesel Cars: Northern Pacific acquired a total of six RDCs. At their peak usage, they protected runs between Spokane and Lewiston, Fargo and Winnipeg, and two roundtrips between Duluth and Staples. All of these trains were discontinued by 1969. Great Northern had but one RDC: RDC3 number 2350, which spent its life on GN in Montana. Best known for making a round trip between Butte and Billings via Great Falls six days per week in the late 1950s (trains 236-42; 43-235), then running between Great Falls and Butte and Great Falls to Shelby, the unit finally ended up operating between Havre and Great Falls as the connection to the *Western Star* after the *Western Star*'s through St. Paul-Havre-Great Falls coach was discontinued in 1967. This RDC operation was transferred to Burlington Northern in March of 1970, and continued to operate through Amtrak Day in 1971. During the Christmas holiday season in 1970-1971, the demand actual exceeded the capacity for RDC 2350, and Burlington Northern brought a former NP RDC B32 to supplement the ex-GN 2350 on the Havre-Great Falls run. The GN RDC did not MU with other equipment, so two engineers had to be used. GN's only RDC was used right to the end of railroad-operated passenger service on Burlington Northern, but the only NP RDC that saw service on BN was on a former Great Northern route!

History shows that Great Northern always approached the post WWII era from a position of strength. Never having declared bankruptcy, never having to haul shipments at a reduced rate having been a land grant railroad (as was the case with NP), and possessing a strong network besides its transcontinental route (which also had the superior operating profile), GN could afford a new *Empire Builder* in 1947 and again in 1951! It also had the primary mail contract across the Northern Tier with its *Fast Mail* train which not only helped its bottom line, but buoyed the *Western Star* when the trains were consolidated, avoiding the need to file for a discontinuance. Having the premier trains and the most service on the Twin Cities-Twin Ports, Twin Cities-Fargo, Twin Cities- Winnipeg, and Seattle-Vancouver, BC routes funneled passengers to GN (and not that of the competition) transcontinental trains.

Northern Pacific's *North Coast Limited* was indeed a fine train, but as any coach will tell you, one star player cannot carry the entire team to a first place finish. A truly great team performs well without its star player. In the case of a Great Northern without an *Empire Builder*, the *Western Star* would make a suitable flagship train, and Great Northern passenger service would still be considered excellent in light of the superior service provided by the *Internationals*, *Gopher*, *Red River*, and *Winnipeg Limited*.

The Milwaukee Road had a knack for dedicating huge amounts of capital it could ill afford into numerous ventures that, even considering the legacy of privately-run passenger trains in America, were poor investments. The discontinuance of the *Olympian Hiawatha* a decade before any other such cessations on other railroads in the Northern Tier epitomized that there were already too many passenger trains to begin with, and was repeated with regard to the railroad overall with the abandonment of most of their Pacific Extension some 19 years later.

So when Amtrak day came on May 1, 1971, it's not huge surprise the lone Chicago-Seattle passenger train would be the *Empire Builder* - with routing changes, but still mostly on the ex-GN route west of the Twin Cities. (And, in spite of a larger population base and arguably better scenery on the ex-NP route, GN's legacy of more trains with more amenities and direct service to Glacier Park meant that the ex-GN route carried 15% more people than the ex-NP between the Twin Cities and Spokane).

The history of rail passenger service between the Twin Cities of Minnesota and Pacific Northwest between 1947 and 1971 is without doubt interesting. Like passenger trains everywhere, they suffered greatly as patrons chose the subsidized highway and airline networks in preference, with the death blow coming the postal service discontinue Railway Post Offices. But that the remaining Chicago-Pacific Northwest passenger train (and Amtrak's most-riden train from 2004 to 2013 inclusive) is operated largely via the former ex-Great Northern *Empire Builder* route is not a mystery or an anomaly. Nor is it "a decision now reviewed with questionable merit" as is the claim in Livingston, Montana. Today, the *Empire Builder* is simply history's legacy.

Summary:

From today's *Empire Builder*, to being the primary predecessor railroad for BNSF's "Northern Transcontinental" and other Northern Tier ("non-transcontinental") main lines to the lodges, inns, and chalets of Waterton-Glacier International Peace Park in use today, Great Northern's legacy seems as secure in 2016 as it ever has. And just as relevant today as in years past.