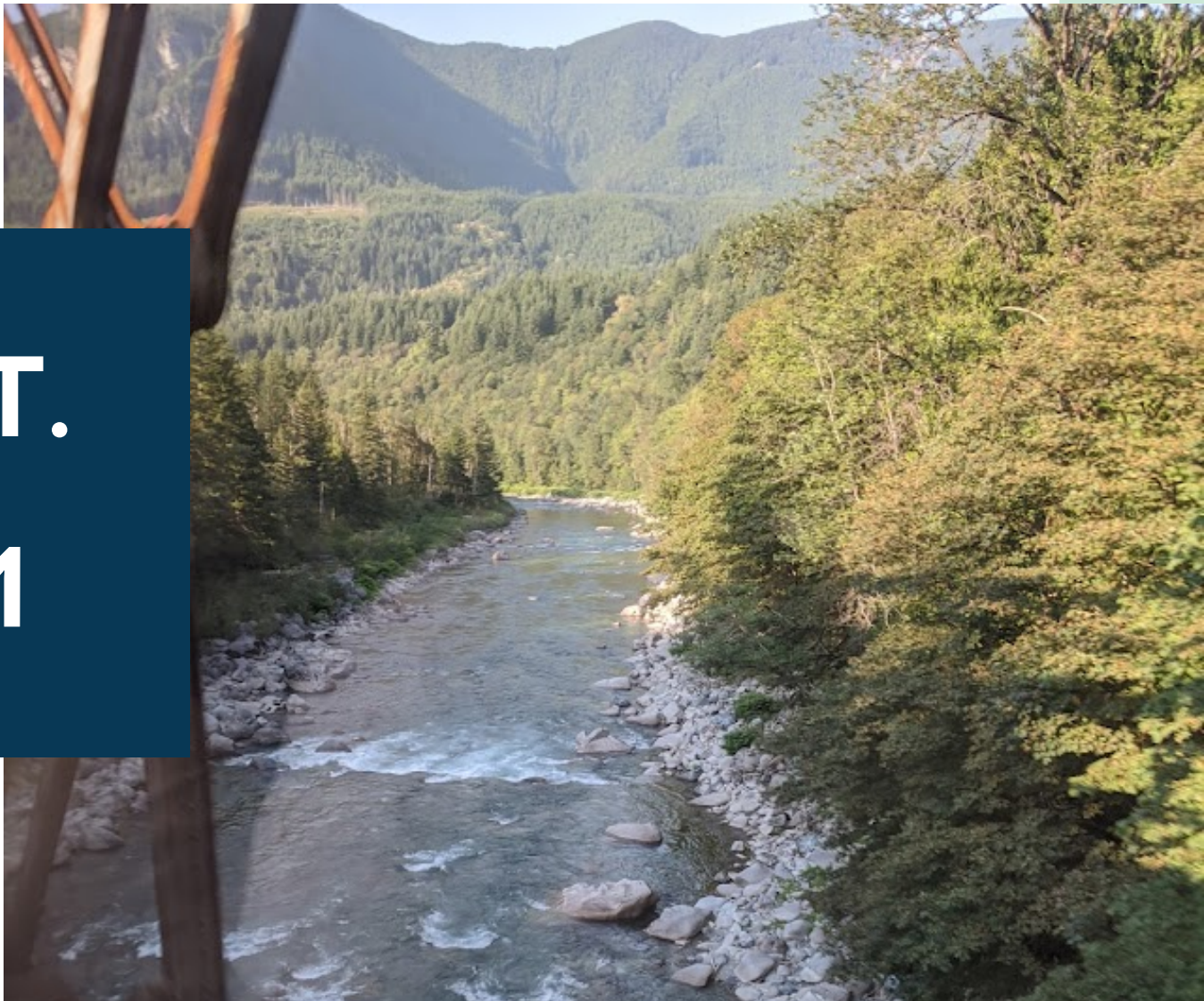




**RAIL PASSENGERS**  
ASSOCIATION

**NORTH COAST HIAWATHA RESTORATION:  
A SOLID RETURN FOR  
TAXPAYERS AND BUSINESS**



**SEPT.  
30  
2021**

**Rail Passengers Research Team:  
Jim Mathews, RPA, Joseph Aiello, RPA, Sean Jeans-Gail, RPA,  
Joshua Hirschfeld, RPA (volunteer), Sophia A. Cohen, Georgia  
Tech (RPA intern)**

## SUMMARY :

*Rail Passengers* assesses that restoring the North Coast Hiawatha as a daily Amtrak service would generate \$271 million each year in economic benefits to the seven states served while costing Amtrak roughly \$68 million per year to operate – a cost offset 66% by collection of \$41 million each year in fares and other customer revenue. As many as 426,000 passengers can be expected to take this train each year once it reaches a steady state of operation, including perhaps as many as 29,000 new passengers who would not otherwise travel at all using any travel mode if the train did not exist.

Additional spending from riders in local economies comes as passengers board and alight in different places, opening their wallets along the way. Savings come mostly through diverting vehicle miles traveled to rail, which produces savings to municipalities in the form of reduced road construction and maintenance, savings to society as a whole in the form of lower deaths and pollution emissions, and savings to riders themselves who more often than not experience a lower overall trip cost by taking a train than they do by driving, flying or riding a bus once the total costs are taken into account.

In this *Rail Passengers* Research Note, at the request of the Big Sky Passenger Rail Authority the Rail Passengers Association re-examined a 2009 study, "North Coast Hiawatha Passenger Rail Study," prepared by Amtrak in response to congressional direction in Section 224 of the Passenger Rail Investment and Improvement Act of 2008. We also performed our own additional assessment of potential total benefits using models co-developed by the Association and the University of Southern Mississippi's Trent Lott Center, plus the commercially available IMPLAN economic-impact planning tool.

## FINDINGS:

*Rail Passengers* assesses that operating a new North Coast Hiawatha service making 47 station stops in seven states could generate a **total economic benefit of \$270.6 million annually**. Benefits specific to the counties in which stations are located would aggregate to \$70.5 million annually, while benefits beyond the county borders throughout the rest of the state could reach \$200.2 million annually.

Our modeling suggests that of the total ridership, roughly 11% would represent travelers who would stay home and not spend any money in the absence of the service. That 11% induced ridership – roughly 29,000 – can be expected to generate an **additional increment of \$4.87 million** of new visitor spending every year.

Together, the seven states should expect to see **45.9 million vehicle-miles traveled**, or VMTs, removed from highways and secondary roads thanks to a combination of existing visitors and residents who will shift some of their driving to using the train and new visitors who would not travel to these locations using any travel mode if the train did not exist. Reducing VMTs can be expected to reduce costs imposed on municipalities and states for highway and road maintenance, reduce pollution and emissions, and reduce the number of deaths from motor-vehicle crashes.

In addition to the core assessment above, *Rail Passengers* reports the following key findings:

- The new train should boast higher ridership than many other existing services
- The new train should remove many millions of vehicle-miles traveled (VMTs) from the highways and secondary roads of the seven states served. Taking cars off the road will create benefits which conservatively total at least \$16.9 million each year
  - Most diverted trips will be from cars, with a small fraction diverting from buses
  - An additional 58,000 trips each year will come from induced demand, i.e., trips that would not otherwise have been taken
- In addition, by supporting an ecosystem of establishments and suppliers that would generate \$154.7 million per year, the new service should produce an additional 11% gain in induced new travelers, injecting \$5 million worth of new visitor-related revenue each year into the economies of the seven states served
- Annual tax receipts from all sources can be expected to rise by \$3.5 million

Results from the IMPLAN model show that visitor spending on Lodging, Restaurants, Entertainment, Shopping and Local Transportation, combined with the stimulus effects of savings from reduced VMTs and spending on the rail operation itself, can be expected to support an additional **Labor Income increment of \$44.1 million and Value-Added effects** – i.e., incremental contribution to Gross Domestic Product from industry-to-industry transactions – **of \$88.2 million annually.**

*Rail Passengers* also examined Amtrak's 2009 assessments of five-year capital investments in each of the seven states that would be served but did not include any economic effects from that spending in its assessment of economic benefits from the new service. A future study thoroughly updating the capital spending plan could be used to calculate additional benefits to the states' economies during the 5–10-year period during which capital investments would be made in building or upgrading stations and improving rights-of-way, tracks and signaling. These benefits would include labor income and value-added effects from construction spending, business-to-business purchases of materials and components. Adjusting for inflation, Amtrak's 2009 estimate of capital spending would come to \$795 million over a five-year period, mostly concentrated in track, rights-of-way, and signaling.

## METHODS AND APPROACH:

For this assessment of the value of restored rail service, we calculated 602 variables for 49 counties in which Big Sky suggests stations would be located, across Washington, Idaho, Montana, North Dakota, Minnesota, Wisconsin, and Illinois.

We began by updating key assumptions from the Amtrak 2009 Performance Improvement Plan (PIP) restoration study<sup>1</sup>, including examining Census Bureau data for population and income changes in the counties studied between 2009 and today<sup>2</sup>. Significant population and income growth have taken place throughout the areas we studied, but especially in nine counties that would be served by this route: King, Kittitas, Benton, and Franklin counties in Washington state; Missoula, Broadwater, and Gallatin counties in Montana; and Stark and Cass counties in North Dakota. According to 2019 Census Bureau estimates, these communities grew by a net 441,032 residents since 2009.

Since 2016, *Rail Passengers* has been assessing and comparing ridership at every station stop in the Amtrak system to understand the differences in the ways that populations in rural counties use Amtrak's long-distance routes compared with more suburban or urban communities. The restored North Coast Hiawatha would have characteristics broadly similar to Amtrak's *Empire Builder*, *Texas Eagle* and *Sunset Limited* routes, and our previous station-by-station work allowed us to generalize about likely passenger behavior on the restored *North Coast* route. This work underpins our county-by-county ridership estimates, which consider whether the station stop is located in an urban, suburban or rural area, the size of the population, the degree of population growth recorded during the intervening decade since Amtrak published its 2009 study, the 2019 median income of the county in which the station is located, and the current average Amtrak fare for similar long-distance segments.

We then used our county-by-county ridership estimates to calculate the ways in which ridership increments in a given locality affected outcomes such as new visitor spending in various categories, the number of trips into and out of a locality, the percentage of trips taken in each travel mode (rail, car, bus or air), removed vehicle miles traveled (VMTs) and the savings associated with reduced VMTs in the form of pollution reductions, avoided fatalities and reduced per-mile road maintenance costs which are typically borne by the municipality. These calculations, in turn, are used to calculate additional business activity generated across industries. This two-step process is explained in more detail below.

1 NORTH COAST HIAWATHA STUDY 2009 - AMTRAK

2 U.S. CENSUS QUICKFACTS V2019 - [HTTPS://WWW.CENSUS.GOV/QUICKFACTS/FACT/TABLE/US/PST045219](https://www.census.gov/quickfacts/FACT/TABLE/US/PST045219)

## How our Modeling Works:

Our proprietary *Rail Passengers* model uniquely assesses 47 variables, such as average bus operating revenues, passenger miles by car, emissions control costs per unit of CO<sub>2</sub>, percentage of rail riders who are visitors versus residents, and so forth. Our model examines the way in which those variables interact with each other to produce different outcomes in the form of additional increments of spending or savings to consumers. The model's assessment produces outputs estimating the effects of ridership on things like visitor spending across different categories and the savings that riders can expect to pocket because of not driving or flying. The two core drivers of our model are ridership and mileage. Ridership figures drive the additional increments of spending, while mileage figures drive the savings produced. This is Step 1 of our economic-benefits modeling process, and it produces a useful accounting of direct benefits stemming from rail ridership all on its own. We then combine this work with an additional step to broaden our view of the benefits of rail.

In Step 2, we enter our model results/outputs into IMPLAN, a modeling tool widely used by universities, the Federal government, and economic-development agencies<sup>3</sup>. IMPLAN relies on Input-Output (I-O) analysis, which looks at inter-industry relationships within an economy. It captures all monetary market transactions between industries. By doing this, analysts can use the tool to study the effects of a change in one or several economic activities – say, introducing a passenger rail service -- on an entire economy. Uniquely among economic-study tools, IMPLAN also includes transactions between industries and institutions and between institutions themselves, giving a truly complete picture of all monetary market transactions taking place over a given time period.

Put more simply, after *Rail Passengers'* model identifies the spending that enters a particular economy from the rail service, the IMPLAN tool traces the flow of that money through other parts of the local economy and the extent to which those flows generate additional labor income, value-added benefits, and tax effects.

## Notes and Limitations:

The purpose of this Research Note commissioned by the Big Sky Passenger Rail Authority was to assess the scale of economic benefits from restored passenger service, using a set of notional station stops supplied by Big Sky and updating ridership projections initially provided by Amtrak. This document is not a formal Operations Analysis, and our work did not consider a range of factors, such as, but not limited to:

- The final operating schedule of the service, which will affect whether the train is desirable or attractive to passengers
- Costs of required station improvements for each station based on an in-situ assessment of existing physical conditions or ADA compliance
- Costs for rolling stock and locomotives that might be used in the service
- An updated assessment of track conditions and signaling by operating company and territory, or
- Changes in operating conditions by proposed host railroads

For purposes of discussion, our team did a cursory update of Amtrak's estimated capital spending as outlined in the 2009 study. *Rail Passengers* believes a worthwhile next step would include re-examination and baselining of needed capital investments in light of changes to host railroad operations, physical and geographical changes in the relevant operating territories, and pending broad-based Federal investments in Amtrak rolling stock systemwide.

<sup>3</sup> FOR MORE DETAILED EXPLANATIONS OF IMPLAN, VISIT [HTTPS://IMPLAN.COM/APPLICATION/](https://implan.com/application/)

## RIDERSHIP PROJECTIONS

As noted earlier, significant population and income growth have taken place throughout the areas we assessed, but especially in nine counties that would be served: King, Kittitas, Benton, and Franklin counties in Washington state; Missoula, Broadwater, and Gallatin counties in Montana; and Stark and Cass counties in North Dakota. According to 2019 Census Bureau estimates, **these communities grew by a net 441,032 residents since 2009.**

*Rail Passengers* own ridership analysis assesses that annual ridership on a potential new North Coast Hiawatha service should reach in the range of **426,000 riders**, based on the mix of urban, suburban, and rural counties which would be served by this route. Our present estimate is 19% higher than Amtrak estimated 12 years ago, and 13% higher than if Amtrak had restored service in 2009 and ridership on that service grew in line with growth elsewhere on Amtrak's long-distance National Network.

*Rail Passengers'* previous work suggests that there is a stronger relationship between the population size of the county and the share of ridership than there is between median income for a county and its ridership. Since 2016, our work examining ridership across all Amtrak-served origin/destination points shows that rural and lightly populated areas are outsized users of passenger rail service, often producing annual trip numbers that are multiples of the catchment area's population rather than fractions.

## PASSENGER SPENDING

New, incremental visitor spending brought to each served community because of the new train service was assessed at **\$4.86 million annually**. It is important to note that this is not all the spending captured in our modeling work, but simply the value of new spending. There are more effects from a broader view of visitor spending captured elsewhere in the model, particularly in the IMPLAN Labor Income, Value-Added and Output values. Some visitors would still make the trip, but might drive, or take a bus or drive. Our model captures them as well. But the Visitor Spending figure reported here calculates the value of visitors who would not travel at all in the absence of rail service.

The calculation underlying the percentage we apply to arrive at this figure was developed in 2017 through extensive research and literature review:

*# of passengers disembarking X fraction of passengers assumed to be nonresident X fraction of "induced" passengers (i.e., passengers who only took the trip because the train route exists) X lodging/restaurant/entertainment/shopping/local transportation spending per person reported by tourist bureaus in each state.*

Annual Induced New State Visitor Spending From North Coast Hiawatha Service						
State	Lodging	Restaurants	Entertainment	Shopping	Local Transportation	Total New Spending
Washington	\$ 357,003	\$ 386,753	\$ 208,252	\$ 252,877	\$ 282,627	\$ 1,487,513
Idaho	\$ 26,644	\$ 17,283	\$ 7,201	\$ 10,802	\$ 10,082	\$ 72,011
Montana	\$ 86,140	\$ 152,357	\$ 98,528	\$ 64,605	\$ 152,357	\$ 553,987
North Dakota	\$ 65,743	\$ 120,197	\$ 51,220	\$ 87,124	\$ 73,809	\$ 398,093
Minnesota	\$ 143,667	\$ 246,286	\$ 256,560	\$ 256,560	\$ 123,143	\$ 1,026,217
Wisconsin	\$ 267,672	\$ 257,758	\$ 138,793	\$ 198,275	\$ 128,879	\$ 991,376
Illinois	\$ 104,426	\$ 74,743	\$ 27,121	\$ 34,595	\$ 88,837	\$ 329,722
<b>TOTAL</b>	<b>\$ 1,051,295</b>	<b>\$ 1,255,377</b>	<b>\$ 787,675</b>	<b>\$ 904,839</b>	<b>\$ 859,734</b>	<b>\$ 4,858,920</b>

Source: Rail Passengers Railway Benefits Calculator, IMPLAN Economic Modeling Tool

## RIDERSHIP PROJECTIONS TABLE:

County Name	Station(s)	Population	10-Yr Census Change	Estimated Riders
King (WA)	Seattle, Auburn	2,252,782	16.6%	30,406
Kittitas (WA)	Cle Elum, Ellensburg	47,935	17.2%	9,709
Yakima (WA)	Yakima, Toppenish	250,873	3.1%	13,852
Benton (WA)	Prosser	204,390	16.7%	11,285
Franklin (WA)	Pasco, Connell	95,222	21.8%	19,288
Adams (WA)	Ritzville	20,220	-3.1%	4,096
Spokane (WA)	Cheney, Spokane	522,798	10.9%	7,056
Bonner (ID)	Sandpoint	45,739	11.9%	9,265
Sanders (MT)	Thompson Falls, Plains	12,113	6.1%	2,454
Lake (MT)	Arlee	30,458	5.9%	6,169
Missoula (MT)	Missoula	119,600	9.4%	6,604
Granite (MT)	Drummond	3,379	9.9%	684
Lewis and Clark (MT)	Helena	69,432	9.5%	14,064
Broadwater (MT)	Townsend	6,237	11.2%	1,263
Gallatin (MT)	Bozeman	114,434	27.8%	6,318
Park (MT)	Livingston	16,606	6.2%	3,364
Sweetgrass (MT)	Big Timber	3,737	2.4%	757
Stillwater (MT)	Columbus	9,642	6.0%	1,953
Yellowstone (MT)	Billings	161,300	9.0%	8,906
Treasure (MT)	Hysham	696	-3.1%	141
Rosebud (MT)	Forsyth	8,937	-3.2%	1,810
Custer (MT)	Miles City	11,402	-2.5%	2,310
Prairie (MT)	Terry	1,077	-8.7%	218
Dawson (MT)	Glendive	8,613	-3.9%	1,745
Wibaux (MT)	Wibaux	969	-4.7%	196
Billings (ND)	Medora	928	18.4%	188
Stark (ND)	Dickinson	31,489	30.1%	6,378
Burleigh (ND)	Mandan/Bismarck	95,626	17.6%	19,369
Stutsman (ND)	Jamestown	20,704	-1.9%	4,194
Barnes (ND)	Valley City	10,415	-5.9%	2,110
Cass (ND)	Fargo	181,923	21.5%	10,045
Becker (MN)	Detroit Lakes	34,423	5.9%	6,973
Wadena (MN)	Staples	13,682	-1.2%	2,771
Sherburne (MN)	St. Cloud	97,238	9.9%	19,696
Ramsey (MN)	St. Paul Minneapolis	550,321	8.2%	30,386
Goodhue (MN)	Red Wing	46,340	0.3%	9,386
Winona (MN)	Winona	50,484	-1.9%	10,226
La Crosse (WI)	La Crosse	118,016	2.0%	6,516
Monroe (WI)	Tomah	46,253	3.5%	9,369
Juneau (WI)	Wisconsin Dells	26,687	0.1%	5,406
Columbia (WI)	Columbus, Portage	57,532	1.2%	11,653
Milwaukee (WI)	Milwaukee	945,726	-0.2%	38,293
Cook (IL)	Glenview, Chicago	5,150,233	-0.9%	69,513
<b>Rail Passengers' Estimated Ridership</b>				<b>426,384</b>

Population in Served Counties: 11,496,611

Source: Rail Passengers Modeling

## ENVIRONMENTAL BENEFITS

Trains are inherently energy efficient. In the United States, the Oak Ridge National Laboratory reports in Edition 39 of the Transportation Energy Data Book that as of 2018 Amtrak consumed 1,535 Btus per passenger mile, compared with 2,840 Btus per passenger mile for personal automobiles <sup>4</sup>. Thus, every reduction in vehicle-miles traveled helps to reduce the energy intensity of passengers' travels.

A 2007 study for the American Bus Association – “Comparison of Energy Use & CO2 Emissions From Different Transportation Modes” – found CO2 levels generated by trains, air travel, cars, and buses were estimated to be 177 grams per passenger mile, 243 grams per passenger mile, 371 grams per passenger mile, and 299 grams per passenger mile, respectively <sup>5</sup>. Once again, every VMT saved translates into less pollution emitted.

Rail Passengers' calculation of the economic value of these reductions is extremely conservative, however, and is based on work by the Victoria Transport Policy Institute (“Transportation Cost and Benefit Analysis II – Air Pollution Cost”). **The Institute notes that CO2 Emissions are very difficult to price, given varying climate forecasts and future discounting behavior**. Per tonne, studies have estimated that CO2 Emissions have an impact from \$17 to \$917. VTPI settled on a control cost in 2007 for CO2 used a default value of \$35 per tonne emitted, which it used in its most recent work on the subject in 2018 <sup>6</sup>. This is the figure Rail Passengers used in its modeling.

With this calculation, it is estimated that passengers aboard the new train would save the seven states at least **\$336,585 each year**. A more robust model to price emissions' true costs would likely result in a higher savings number.

## OVERALL BENEFITS FROM DIRECT OPERATIONS

### Annual Estimated Economic Benefits of North Coast Hiawatha Service

Presented below are the aggregate results of all the calculations and formula results from both the *Rail Passengers* model and the IMPLAN model's calculations of additional benefits in the form of Labor Income, Value-Added and total economic Output.

Results at the county level for counties in which station stops will be located are driven primarily by ridership at these stations. Results at a state-wide level are primarily driven by induced state-level spending not captured at the station level.

As noted earlier, *Rail Passengers* did not include the benefits of a projected five- to seven-year capital investment program that will be required to improve railbeds and signals, construct new tracks and sidings, and bring stations into compliance with Americans with Disabilities Act (ADA) access standards.

*NOTE: The “Output” column includes amounts from the Labor Income and Value-Added columns, but also includes other inputs. Output cannot be viewed as the sum of Labor Income and Value-Added.*

4 TRANSPORTATION ENERGY DATA BOOK: EDITION 39, TABLE 2.13 PASSENGER TRAVEL AND ENERGY USE, 2018 - [HTTPS://TEDB.ORNL.GOV/WPCONTENT/UPLOADS/2021/02/TEDB\\_ED\\_39.PDF#PAGE=63](https://tedb.ornl.gov/wpcontent/uploads/2021/02/TEDB_ED_39.PDF#PAGE=63)

5 M. B. & ASSOCIATES, "COMPARISON OF ENERGY USE & CO2 EMISSIONS FROM DIFFERENT TRANSPORTATION MODES," AMERICAN BUS ASSOCIATION, 2007

6 TODD LITMAN "TRANSPORTATION COST AND BENEFIT ANALYSIS II – AIR POLLUTION COSTS," VICTORIA TRANSPORT POLICY INSTITUTE, 2018.

# ANNUAL ESTIMATED ECONOMIC BENEFITS OF NORTH COAST HIAWATHA SERVICE:

Annual Estimated Economic Benefits of North Coast Hiawatha Service										
County/State (Station)	Visitor Spending	Reduced Pollution	Reduced Fatalities	Avoided Road Maintenance	Avoided Travel Costs (vs Other Modes)	Rail Operations & Maintenance Spending	Labor Income	Value Added	Output*	Total Economic Benefit
King WA (SEA and Auburn)	\$ 472,655	\$ 53,939	\$ 65,034	\$ 2,108,163	\$ 2,975,610	\$ -	\$ 1,133,869	\$ 2,022,447	\$ 2,992,114	\$ 8,667,516
Kodjara WA (Cle Elum, Ellensburg)	\$ 150,924	\$ 14,118	\$ 20,766	\$ 673,162	\$ 950,148	\$ -	\$ 189,199	\$ 392,903	\$ 665,110	\$ 2,474,228
Yakima WA (Yakima, Toppenish)	\$ 215,327	\$ 20,142	\$ 29,627	\$ 960,412	\$ 1,355,593	\$ -	\$ 441,669	\$ 793,441	\$ 1,306,283	\$ 3,887,383
Benton WA (Prosser)	\$ 175,423	\$ 16,409	\$ 24,137	\$ 782,432	\$ 1,104,380	\$ -	\$ 366,910	\$ 680,138	\$ 1,125,797	\$ 3,228,578
Franklin WA (Pasco, Connell)	\$ 299,828	\$ 28,046	\$ 41,254	\$ 1,337,310	\$ 1,887,574	\$ -	\$ 457,886	\$ 870,771	\$ 1,418,493	\$ 5,012,505
Adams WA (Ritzville)	\$ 63,672	\$ 5,956	\$ 8,761	\$ 283,991	\$ 400,845	\$ -	\$ 69,820	\$ 133,013	\$ 220,915	\$ 984,140
Spokane WA (Cheney, Spokane)	\$ 109,684	\$ 10,260	\$ 15,092	\$ 489,219	\$ 690,519	\$ -	\$ 308,710	\$ 573,913	\$ 973,609	\$ 2,288,383
Bonner ID (Sandpoint)	\$ 72,011	\$ 1,897	\$ 2,791	\$ 90,476	\$ 139,425	\$ -	\$ 51,847	\$ 99,481	\$ 190,754	\$ 497,354
Sanders MT (Thompson Falls, Plains)	\$ 23,059	\$ 2,126	\$ 3,127	\$ 101,368	\$ 147,954	\$ -	\$ 30,856	\$ 53,743	\$ 113,725	\$ 391,360
Lake County MT (Afton)	\$ 57,968	\$ 5,344	\$ 7,861	\$ 254,825	\$ 371,935	\$ -	\$ 96,227	\$ 166,105	\$ 333,448	\$ 1,031,380
Missoula MT (Missoula)	\$ 62,055	\$ 5,721	\$ 8,415	\$ 272,793	\$ 398,161	\$ -	\$ 184,460	\$ 296,975	\$ 539,779	\$ 1,286,926
Granite County MT (Drummond)	\$ 6,427	\$ 593	\$ 872	\$ 28,254	\$ 41,239	\$ -	\$ 5,432	\$ 11,936	\$ 26,146	\$ 103,531
Lewis and Clark MT (Helena)	\$ 132,154	\$ 12,184	\$ 17,921	\$ 580,946	\$ 847,932	\$ -	\$ 326,920	\$ 533,654	\$ 1,002,087	\$ 2,593,224
Broadwater MT (Townsend)	\$ 11,868	\$ 1,094	\$ 1,609	\$ 52,171	\$ 76,147	\$ -	\$ 12,015	\$ 22,774	\$ 46,880	\$ 189,770
Gallatin MT (Bozeman)	\$ 59,368	\$ 5,473	\$ 8,051	\$ 260,980	\$ 380,918	\$ -	\$ 152,118	\$ 245,379	\$ 433,618	\$ 1,148,408
Park MT (Livingston)	\$ 31,610	\$ 2,914	\$ 4,287	\$ 138,958	\$ 202,819	\$ -	\$ 47,611	\$ 82,254	\$ 150,592	\$ 531,179
Sweetgrass MT (Big Timber)	\$ 7,113	\$ 656	\$ 965	\$ 31,270	\$ 45,640	\$ -	\$ 7,540	\$ 13,544	\$ 29,543	\$ 115,186
Stillwater MT (Columbus)	\$ 18,352	\$ 1,692	\$ 2,489	\$ 80,673	\$ 117,748	\$ -	\$ 19,745	\$ 33,463	\$ 64,242	\$ 285,196
Yellowstone MT (Billings)	\$ 83,686	\$ 7,715	\$ 11,349	\$ 367,883	\$ 536,951	\$ -	\$ 228,890	\$ 374,414	\$ 667,855	\$ 1,675,439
Treasure MT (Hysham)	\$ 1,325	\$ 122	\$ 180	\$ 5,824	\$ 8,501	\$ -	\$ 895	\$ 1,879	\$ 3,751	\$ 19,704
Roosebud MT (Forsyth)	\$ 17,008	\$ 1,568	\$ 2,306	\$ 74,766	\$ 109,127	\$ -	\$ 17,984	\$ 30,317	\$ 62,860	\$ 267,635
Custer MT (Miles City)	\$ 21,706	\$ 2,001	\$ 2,944	\$ 95,420	\$ 139,272	\$ -	\$ 48,060	\$ 78,508	\$ 145,383	\$ 406,726
Prairie MT (Terry)	\$ 2,048	\$ 189	\$ 278	\$ 9,005	\$ 13,143	\$ -	\$ 1,301	\$ 2,631	\$ 5,413	\$ 30,077
Dawson MT (Glendive)	\$ 16,397	\$ 1,512	\$ 2,224	\$ 72,081	\$ 105,208	\$ -	\$ 28,068	\$ 49,424	\$ 92,107	\$ 289,528
Wilbax MT (Wilbax)	\$ 1,842	\$ 170	\$ 250	\$ 8,096	\$ 11,817	\$ -	\$ 1,709	\$ 2,757	\$ 5,177	\$ 27,351
Billings ND (Medora)	\$ 1,770	\$ 161	\$ 237	\$ 7,692	\$ 11,656	\$ -	\$ 1,409	\$ 2,719	\$ 4,976	\$ 26,493
Stark ND (Dickinson)	\$ 60,047	\$ 5,473	\$ 8,050	\$ 260,967	\$ 395,431	\$ -	\$ 106,477	\$ 175,814	\$ 318,649	\$ 1,048,618
Burleigh ND (Mandan/Bismarck)	\$ 182,354	\$ 16,621	\$ 24,448	\$ 792,516	\$ 1,200,863	\$ -	\$ 558,426	\$ 871,568	\$ 1,562,988	\$ 3,779,789
Stutsman ND (Jamestown)	\$ 39,485	\$ 3,599	\$ 5,294	\$ 171,605	\$ 260,025	\$ -	\$ 77,649	\$ 135,056	\$ 259,001	\$ 739,009
Barnes ND (Valley City)	\$ 19,865	\$ 1,811	\$ 2,663	\$ 86,334	\$ 130,818	\$ -	\$ 25,322	\$ 45,378	\$ 95,488	\$ 336,980
Cass ND (Fargo)	\$ 94,571	\$ 8,620	\$ 12,679	\$ 411,008	\$ 622,782	\$ -	\$ 289,528	\$ 479,356	\$ 870,080	\$ 2,019,740
Becker MN (Detroit Lakes)	\$ 90,080	\$ 5,412	\$ 7,961	\$ 258,075	\$ 380,959	\$ -	\$ 118,716	\$ 210,124	\$ 415,450	\$ 1,157,937
Wadena MN (Staples)	\$ 35,797	\$ 2,151	\$ 3,164	\$ 102,556	\$ 151,389	\$ -	\$ 39,769	\$ 72,881	\$ 141,940	\$ 436,997
Sherburne MN (St. Cloud)	\$ 254,442	\$ 15,288	\$ 22,487	\$ 728,960	\$ 1,076,059	\$ -	\$ 265,463	\$ 511,156	\$ 948,649	\$ 3,045,886
Ramsey MN (St. Paul/Minneapolis)	\$ 392,541	\$ 23,585	\$ 34,692	\$ 1,124,603	\$ 1,660,091	\$ -	\$ 839,945	\$ 1,393,763	\$ 2,326,754	\$ 5,562,266
Goodhue MN (Red Wing)	\$ 121,253	\$ 7,285	\$ 10,716	\$ 347,381	\$ 512,789	\$ -	\$ 157,133	\$ 268,939	\$ 494,984	\$ 1,494,409
Winona MN (Winona)	\$ 132,104	\$ 7,937	\$ 11,675	\$ 378,470	\$ 558,681	\$ -	\$ 165,427	\$ 288,053	\$ 534,468	\$ 1,623,336
La Crosse WI (La Crosse)	\$ 90,681	\$ 3,136	\$ 4,613	\$ 149,532	\$ 219,570	\$ -	\$ 116,273	\$ 198,232	\$ 346,032	\$ 813,563
Monroe WI (Tomah)	\$ 130,385	\$ 4,509	\$ 6,633	\$ 215,005	\$ 315,707	\$ -	\$ 97,064	\$ 173,481	\$ 342,049	\$ 1,014,287
Juneau WI (Wisconsin Dells)	\$ 75,233	\$ 2,602	\$ 3,827	\$ 124,060	\$ 182,166	\$ -	\$ 52,622	\$ 96,046	\$ 186,402	\$ 574,290
Columbia WI (Columbus, Portage)	\$ 162,170	\$ 5,608	\$ 8,249	\$ 267,419	\$ 392,671	\$ -	\$ 147,199	\$ 247,742	\$ 461,036	\$ 1,297,155
Milwaukee WI (Milwaukee)	\$ 532,908	\$ 18,430	\$ 27,109	\$ 878,767	\$ 1,290,360	\$ -	\$ 700,048	\$ 1,163,394	\$ 1,887,402	\$ 4,634,976
Cook IL (CHI)	\$ 336,983	\$ 12,243	\$ 18,009	\$ 583,782	\$ 871,073	\$ -	\$ 617,431	\$ 1,050,270	\$ 1,634,869	\$ 3,456,959
Washington State-Wide	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,407,785	\$ 12,294,650	\$ 22,975,302	\$ 41,887,244	\$ 63,295,029
Idaho State-Wide	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,015,181	\$ 1,271,718	\$ 2,668,716	\$ 4,894,030	\$ 7,909,211
Montana State-Wide	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,754,215	\$ 5,389,275	\$ 12,220,448	\$ 21,465,099	\$ 34,219,314
North Dakota State-Wide	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,633,608	\$ 4,449,581	\$ 12,032,600	\$ 19,755,489	\$ 32,389,097
Minnesota State-Wide	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,427,536	\$ 6,335,585	\$ 12,602,997	\$ 22,063,380	\$ 33,490,916
Wisconsin State-Wide	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,085,675	\$ 3,875,861	\$ 7,544,062	\$ 13,360,159	\$ 20,445,834
Illinois State-Wide	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,593,056	\$ 1,890,871	\$ 3,203,427	\$ 5,815,252	\$ 8,408,308
<b>TOTAL</b>	\$ 4,866,181	\$ 346,311	\$ 495,094	\$ 16,049,211	\$ 23,291,697	\$ 70,917,056	\$ 44,112,981	\$ 89,216,388	\$ 154,687,552	\$ 270,653,102

\* - Includes Labor Income and Value Added values, but not a total

Source: Rail Passengers Railway Benefits Calculator, IMPLAN Economic Modeling Tool



## ADDITIONAL RESULTS

### Annual Tax Revenues Created by North Coast Hiawatha Service

Recall that our study protocols look not only at direct spending by visitors, but at the business-to-business transactions that are spurred on by the visitors' activities. All of these activities – from staying in a hotel to eating at a restaurant, visiting an entertainment venue, buying local goods or renting a car – support employees who in turn make purchases and pay sales taxes or property taxes, or cause retail outlets to buy additional goods, or induce supporting businesses to supply services to the hotels or restaurants or stores. Each of those transactions produces tax revenues at varying levels depending on the jurisdiction. The IMPLAN model captures those tax effects at the county level, which are presented in this table.

Annual Tax Revenues Created By North Coast Hiawatha Service						
State	Sub County General	Sub County Special Districts	County	State	Federal	Total Tax Revenue
Washington	\$ 95,970	\$ 108,837	\$ 63,395	\$ 439,867	\$ 670,222	\$ 1,378,290
Idaho	\$ 743	\$ 1,749	\$ 3,175	\$ 7,372	\$ 11,621	\$ 24,661
Montana	\$ 12,148	\$ 24,828	\$ 25,968	\$ 102,221	\$ 248,120	\$ 413,286
North Dakota	\$ 12,470	\$ 10,020	\$ 6,022	\$ 113,297	\$ 203,634	\$ 345,444
Minnesota	\$ 49,646	\$ 48,918	\$ 55,737	\$ 230,793	\$ 297,435	\$ 682,528
Wisconsin	\$ 38,295	\$ 52,809	\$ 29,675	\$ 116,213	\$ 212,234	\$ 449,226
Illinois	\$ 22,156	\$ 34,848	\$ 7,207	\$ 42,012	\$ 119,816	\$ 226,039
<b>TOTAL</b>	<b>\$ 231,429</b>	<b>\$ 282,009</b>	<b>\$ 191,180</b>	<b>\$ 1,051,774</b>	<b>\$ 1,763,082</b>	<b>\$ 3,519,474</b>

Source: Rail Passengers Railway Benefits Calculator, IMPLAN Economic Modeling Tool

## Definitions, Explanations and Notes

**Visitor Spending** – captures additional spending in the local economy exclusively from the roughly 5% to 7% of annual ridership that would not be there but for the train service.

# of passengers deboarding X fraction of passengers assumed to be nonresident X fraction of "induced" passengers (i.e., passengers who only took the trip because the train route exists) X lodging/restaurant/entertainment/shopping/local transportation spending per person reported by tourist bureaus in each state.

**Road fatalities** – an extremely conservative set of assumptions which uses 50% of the U.S. Dept of Labor's figure for statistical value of a life saved and examines only the subset of existing passenger miles shifted directly from car to rail

**Road maintenance** – derived from reductions in annual Vehicle Miles Traveled (VMTs) by non-resident passengers (i.e., assumes residents will likely drive to and from their preferred stations to use the train, so the rail service only reduces the VMTs imposed by non-residents).

**Labor Income** – All forms of Employment income, including Employee Compensation (wages, salaries, and benefits) and Proprietor Income.

**Value-Added** – The difference between an Industry's or establishment's total Output and the cost of its Intermediate Inputs; it is a measure of the contribution to GDP. Value Added is a large portion of Output, as it encompasses Labor Income (LI), Other Property Income (OPI), and Taxes on Production and Imports (TOPI).

**Output** – For all Industries, output equals the value of Industry production, which is equal to sales plus net inventory change, but details vary depending on industry sector. For wholesale and retail, Output is equal to gross wholesale margin or gross retail margin, respectively, not gross sales. In other words, the value of production for wholesale and retail sectors is the value of the services they provide and doesn't include the value of the items sold within their establishment. Output includes labor income and value-added, but also other intermediate inputs. Thus, in the tables we present, it's not accurate to add labor income and value-added to yield Output.