Per Capita Intercity Passenger Train Ridership: A Comparison

Jeff Broderick
Geographic Information Systems, Fall 2013

What Critics Say

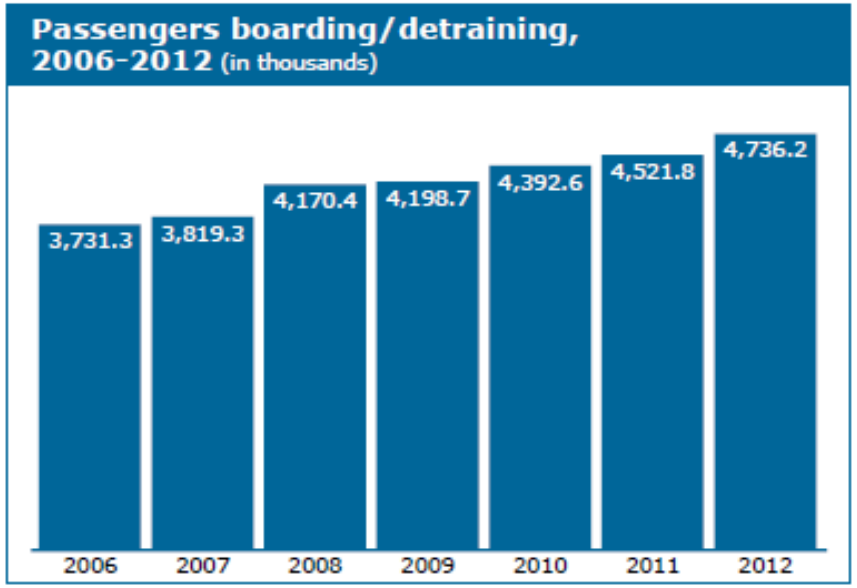
Amtrak said Monday it posted another yearly increase in passengers as doubts loomed over the future of its money-losing network of long-distance trains. McClatchy Newspapers

To critics, Amtrak's long-distance trains don't reflect the way Americans travel today. Miami Herald

And then you have a whole bunch of huge money-losing long-distance routes that official national rail policy treats with kid gloves. The report euphemistically refers to these routes as serving a "geographical equity" goal, which is a polite way of saying it's nonsense policy to broaden political support Slate.com

The Critics are Not Correct

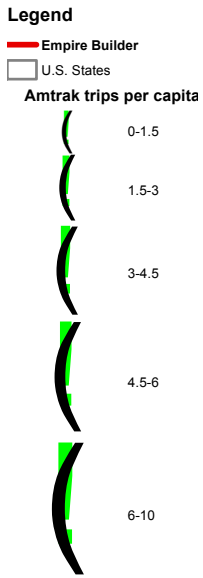
- Sustained long distance growth for last 10 years
- Large portions of revenue passenger miles are generated from long distance trains

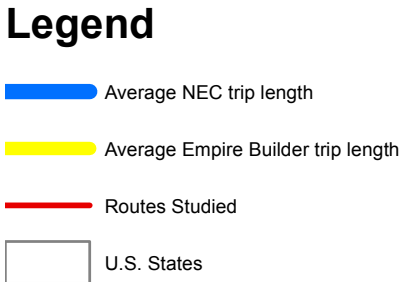


Theory: On a per capita basis, Do towns along long distance routes use Amtrak to a greater,

Yes! Maps can demonstrate this.

- Use of graduated symbol map
- Use line map to compare average trip length
- Combine information in new ways



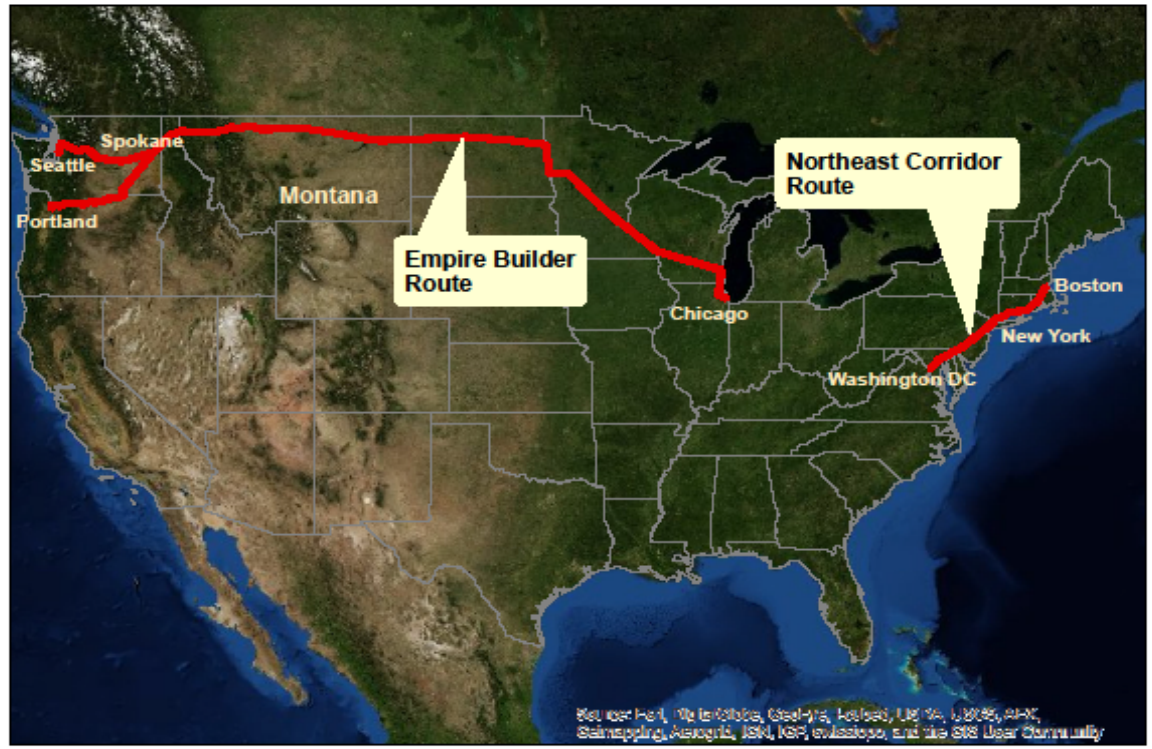


Data

- From Amtrak, Amtrak passenger manifests for the week of November 3, 2013, National Association of Railroad Passengers 2012 data and 2010 US Census
- Number crunching using Excel for NEC average passenger miles

5-Nov	#PAX	#RPM	NWK	#PAX	#RPM	PHL	#PAX	#RPM	WIL	#PAX	#RPM	BAL	#PAX	#RPM	BWI	#PAX	#RPM	NCR	#PAX	#RPM	WAS	#PAX	#RPM	TOT PAX	TOT RPM
			241			322			347			416			427			448			457				
BOS	57	13167	241	4	964	322	0	0	347	0	0	416	1	416	427	0	0	448	0		457	0	0	66	15136
BBY	14	3220	240	2	480	321	0	0	346	0	0	415	0	0	426	0	0	447	0	0	456	0	0	16	3700
RTE	78	17160	230	2	460	311	0	0	336	0	0	405	0	0	416	0	0	437	0	0	446	0	0	82	17988
PVD	33	6204	198	0	0	279	1	279	304	0	0	373	0	0	384	0	0	405	0	0	414	1	414	37	7201
NHV	1	75	85	1	85	166	4	664	191	2	382	260	0	0	271	0	0	292	0	0	301	1	301	9	1507
STM	0	0	46	0	0	127	8	1016	152	1	152	221	4	884	232	0	0	253	0	0	262	3	786	16	2838
NYP	0	0	10	0	0	91	18	1638	116	6	696	185	4	740	196	7	1372	217	0	0	226	70	15820	105	20266
NWK	0	0	0	0	0	81	2	162	106	0	0	175	0	0	186	0	0	207	0	0	216	8	1728	10	1890
PHL	0	0	81	0	0	0	0	0	25	0	0	94	1	94	105	2	210	126	0	0	135	10	1350	13	1654
WIL	0	0	106	0	0	25	0	0	0	0	0	69	0	0	80	0	0	101	0	0	110	5	550	5	550
BAL	0	0	175	0	0	94	0	0	69	0	0	0	0	0	11	0	0	32	0	0	41	0	0	0	0
BWI	0	0	186	0	0	105	0	0	80	0	0	11	0	0	0	0	0	21	0	0	30	0	0	0	0
WAS	0	0	216	0	0	135	0	0	110	0	0	41	0	0	30	0	0	9	0	0	0	0	0	0	0
																						TOTALS		359	72730
																						AVERAGE PAX MILES			202.5905

Route Comparison: Northeast Corridor and Empire Builder Routes



Legend

Routes Studied

U.S. States

0 170 340 680 1,020 1,360
Miles

N

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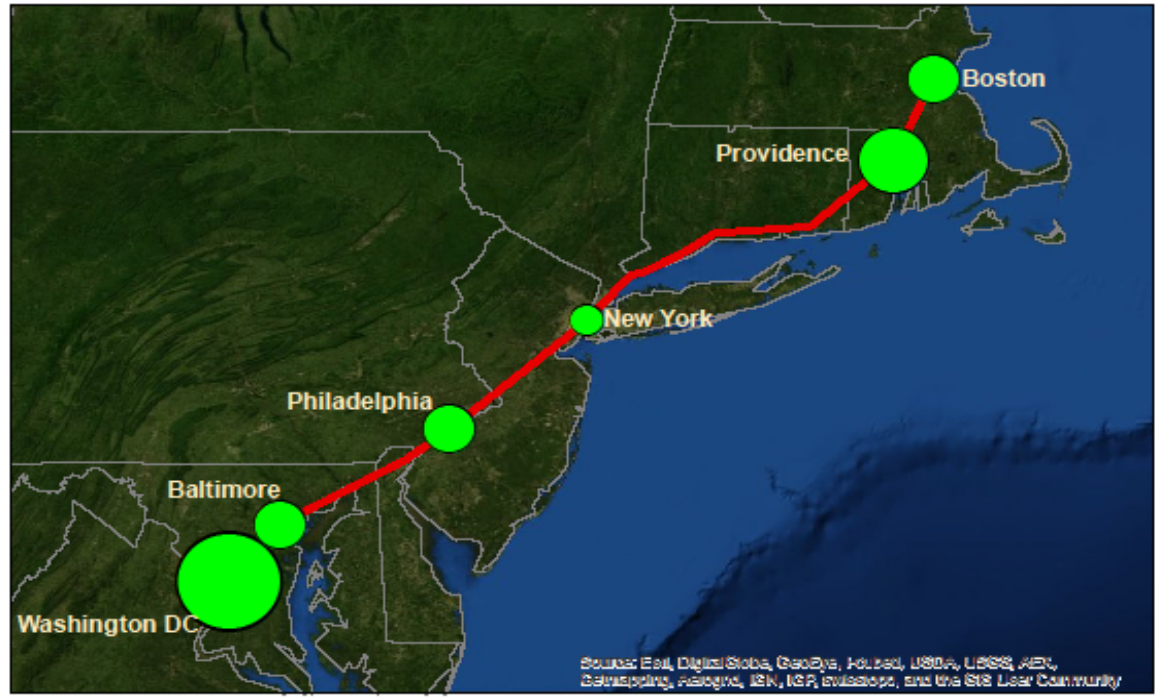
Source: Esri

Focus Northeast Corridor Cities: Boston, Providence, New York, Philadelphia, Baltimore and Washington, DC



Legend

Northeast Corridor

U.S. States

Amtrak trips per capita

0-1.5

1.5-3

3-4.5

4.5-6

6-10

0 20 40 80 120 160 200 Miles

N

City	2010 Population	Passengers per year	Trips per capita
Washington, DC	601723	4807172	7.989011555
Providence	178036	660775	3.711468467
Philadelphia	1526006	3979475	2.607771529
Boston	617594	1421637	2.301895744
Baltimore	620961	999764	1.610027039
New York	8175136	9271554	1.134116179

Jeff Broderick 12/5/2013
Source: Esri

NEC Cities Per Capita Ridership

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Washington, DC	601723	4807172	7.989011555
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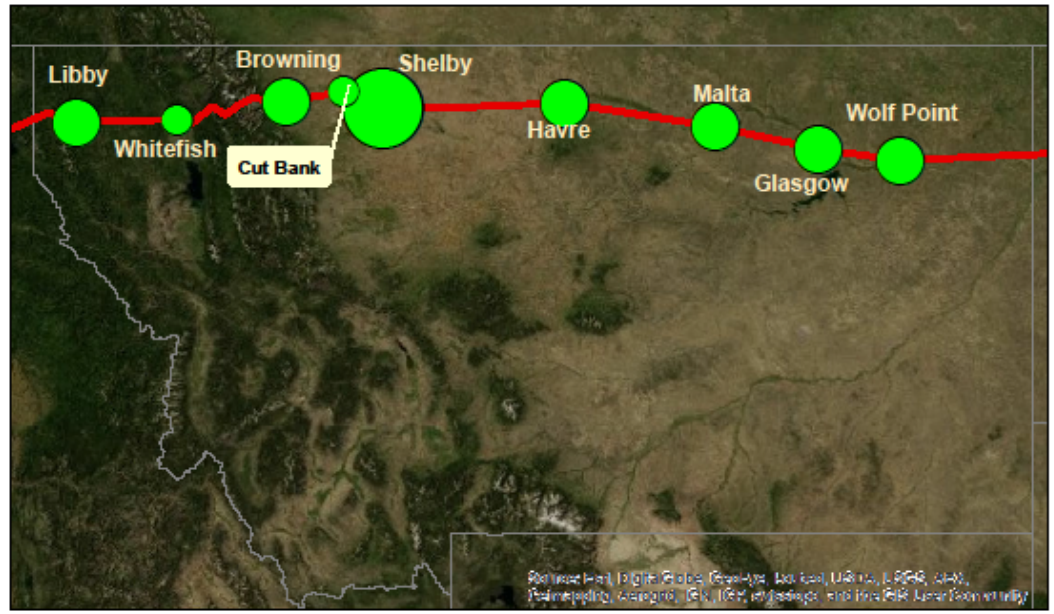
Focus Montana Cities:Libby, Whitefish area, Browning, Cut Bank, Shelby, Havre, Malta, Glasgow, Wolf Point



Legend

Empire Builder

U.S. States

Amtrak trips per capita

0-1.5

1.5-3

3-4.5

4.5-6

6-10

0 25 50 100 150 200 250 Miles

N

City	2010 Population	Passengers per year	Trips per capita
Shelby	3376	15501	4.591528436
Wolf Point	2733	8023	2.935601903
Libby	2628	6626	2.52130898
Browning	1016	2180	2.145669291
Malta	1936	3466	1.790289256
Glasgow	3319	5559	1.674902079
Havre	9430	14198	1.505620361
Cut Bank	2963	3236	1.092136348
Whitefish area	90928	75039	0.825257346
Average trip length		**736 miles**	

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Source: Esri

Empire Builder Montana Per Capita Ridership

City	2010 Population	Passengers per year	Trips per capita
Shelby	3376	15501	4.591528436
Wolf Point	2733	8023	2.935601903
Libby	2628	6626	2.52130898
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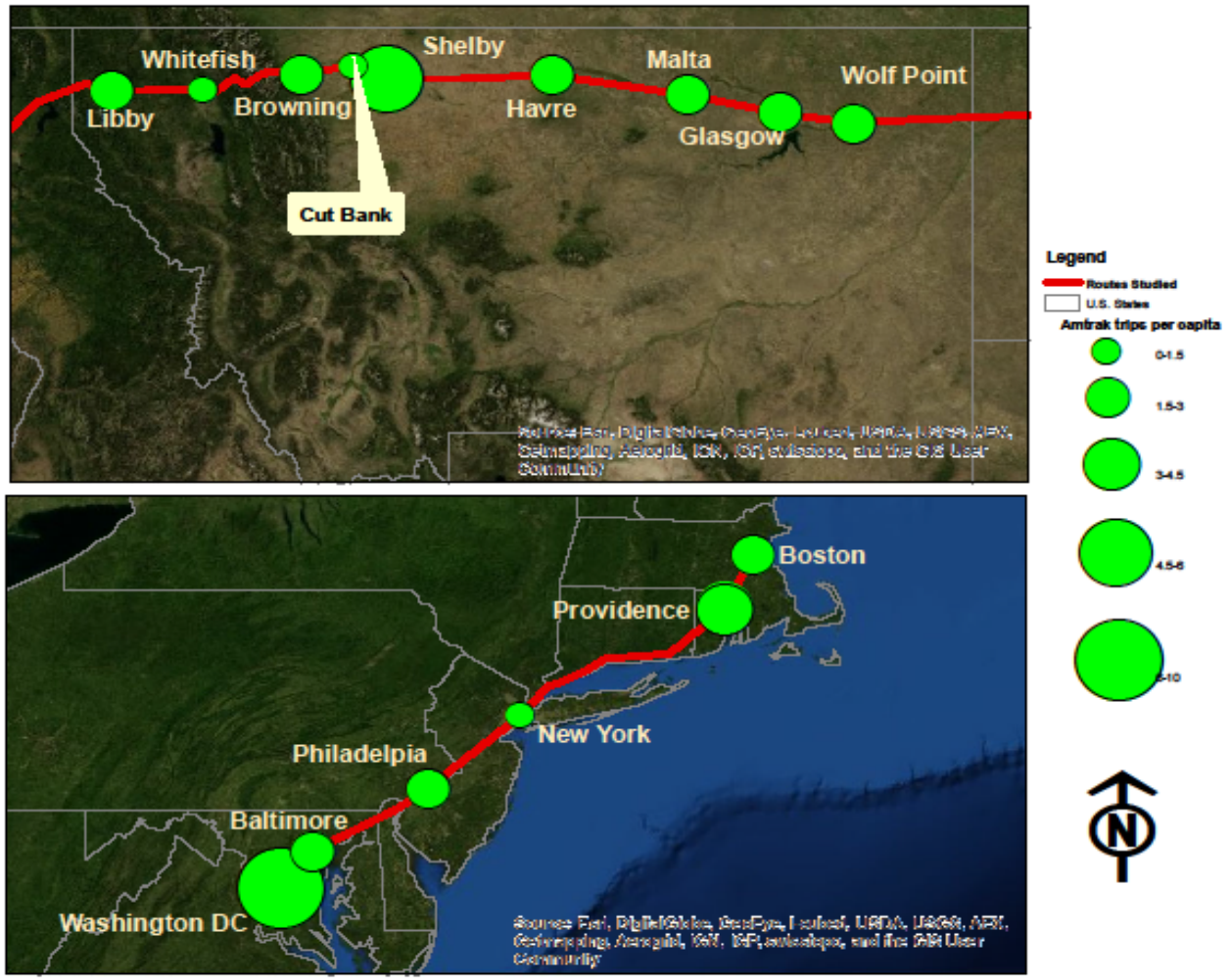
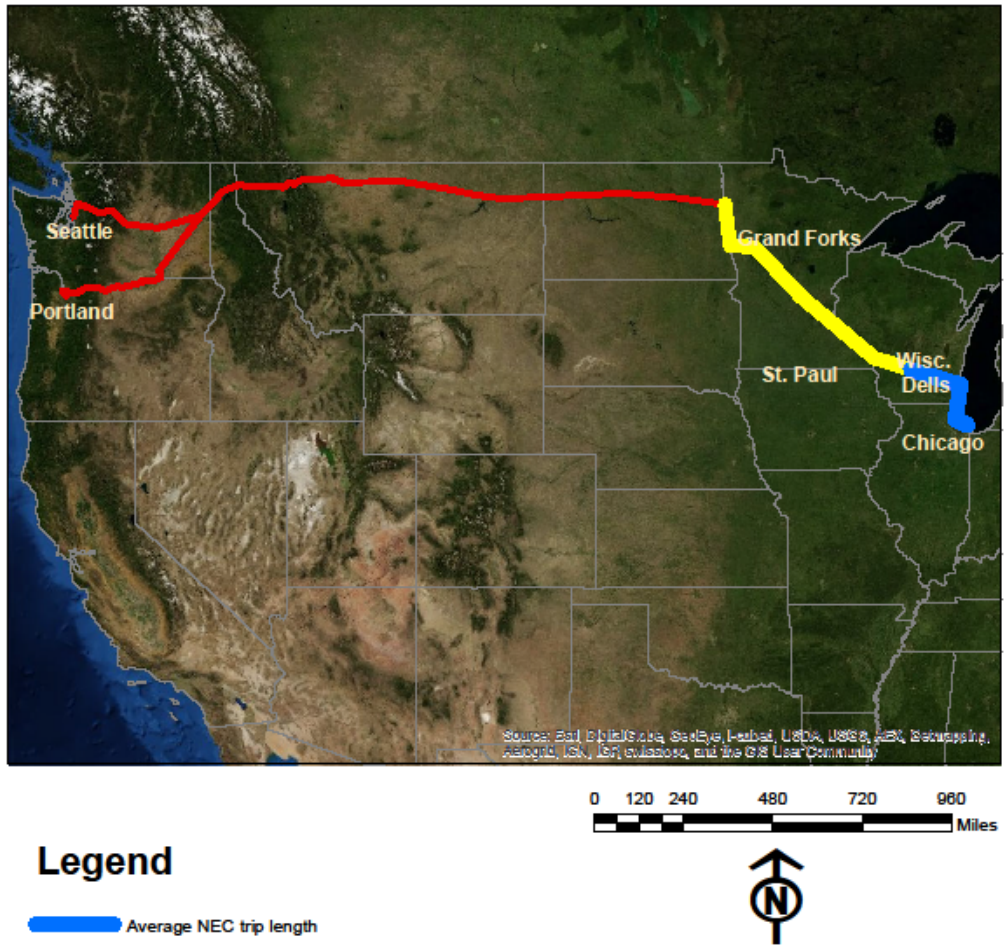
Side by Side Comparison:
Empire Builder and Northeast Corridor



Average Trip Length

Empire Builder: 736 miles
Northeast Corridor: 200 miles



RPMs

Acela

3,331,590 pax X 200 miles= 666,318,000 RPMs

Empire Builder

533,323 pax X 736= 392,525,728 RPMs

Theory proven?

- Largely, yes
- Some cities such as New York utilize Amtrak less than most cities in Montana
- Many other cities in Montana equal or exceed NEC per capita patronage
- With RPMs taken into account, long distance trains have an outsize influence on system RPMs meaning long distance trains have an outsize influence on total Amtrak utility

Sources

- Amtrak passenger manifests week of November 3-10, 2013
- National Association of Rail Passengers annual passenger statistics
  - http://narprail.org/resources/fact-sheets
- Acela, Apples, Watermelons and-Profit?, Don Philips, Trains Magazine, pages 10-11, June 2013
- Slate.com, http://www.slate.com/blogs/moneybox/2013/03/01/amtrak_profits_in_the_northeast_where_people_use_it_they_make_money.html
- Miami Herald, http://www.miamiherald.com/2013/10/28/3711407/without-federal-aid-amtrak-could.html
- McClatchy Newspapers/Buffalo News, http://www.buffalonews.com/apps/pbcs.dll/article?avis=BN&date=20131029&category=WORLD&lopenr=131028607&Ref=AR&profile=1617
- Google Images
- Esri map and projection data

So, What Does This Mean for Advocates, Planners and Future Passenger Service?

- The myth that nobody rides long distance trains off the NEC can be proven false with data
- Advocates cannot just say that misinformation isn’t true
- Know what per capita ridership and data actually are
- Know the difference between ridership and revenue passenger miles (RPMs) and the importance of RPMs per product line

Challenges to Passenger Service in North America

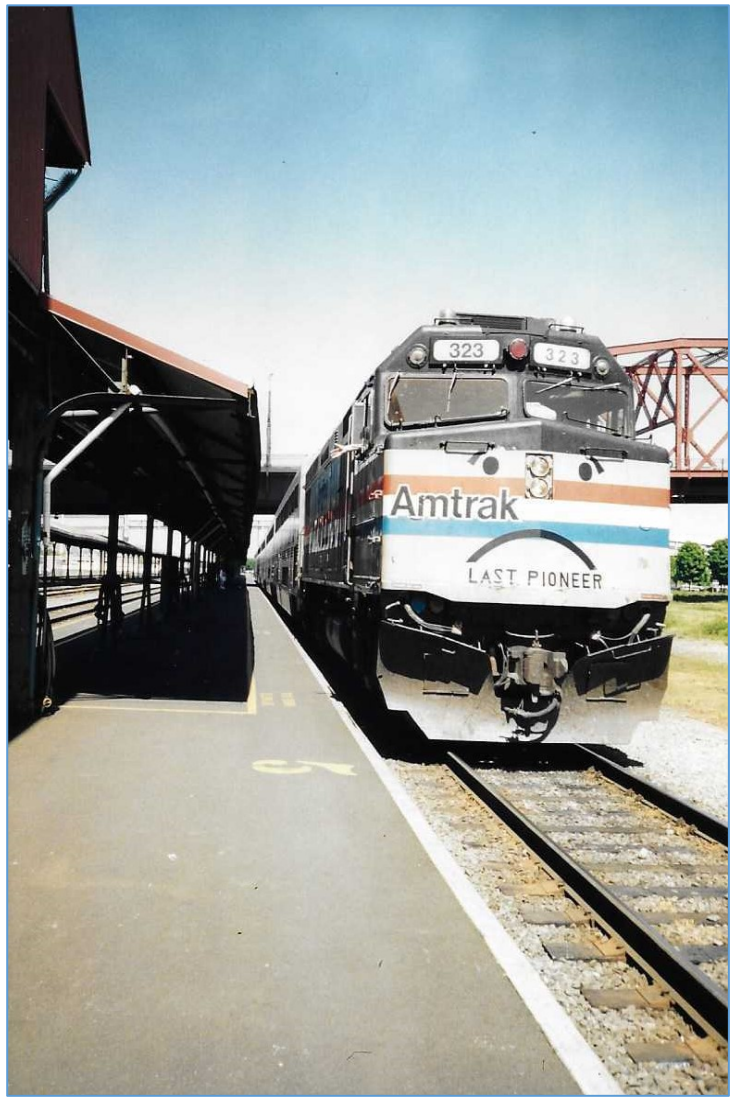
- **Political will-Amtrak must fight for right to exist the next year and then fight for funding**
- **Weak mandate to provide service**
- **Ad hoc funding and inconsistent levels of service**
- **Current Amtrak regulations (PRIIA) make it difficult to start any new service**
  - Amtrak disinterested in adding to the basic system (long distance trains) beyond commissioning mandated studies
  - Any non-NEC trains must receive state support-some success with Cascades service

Question Time!

Question Time!

- Amtrak measured by profit/loss
- Highways and air travel system measured by utility/benefit to society/access

Passenger Rail Status Quo-Reluctance to Engagement



- Public agencies normally commission a study
- Funding is not identified
- Timelines are unclear, especially with no path for funding
- Railroads often not engaged early in the process
- Process takes so long (decades) that some advocates lose interest
- *Pioneer* study from 2009 is a typical example
  - Intended to restore a Seattle-Portland-Boise-Denver train
  - Funding not identified
  - Union Pacific was asked to respond, not a partner in process
- Parties talk past each other instead of seeking consensus

Planning and Advocacy of Passenger Rail:

One cat is hard to herd.

For new passenger service the following must happen:

- Funding identified-federal, state, local
  - With luck, multi-year funding! (unlikely)
- Multiple state DOTs must be on the same page
- Multiple state legislatures must be on the same
- Freight railroads on board
- Capital funding for infrastructure improvement
- Local funding
- Equipment sourced
- Coordination with economic development agen regional agencies, COGs, other advocates
- Advocacy resources
- Opposition must be surmounted
  - Data like per capita ridership can counter opposition

What does This Mean for the Pioneer?

Necessary Next Steps

- Coordinate advocacy
- Engage local elected officials
- Engage state legislators
- Engage congress people
- Engage governors
- Engage DOTs
- Engage regional economic development agencies
- **Identify and convene key stakeholders early and often**
- **Identify a stable source of funding**
- **All of this must be coordinated like it's someone's full time job**

The Freight Railroad-Amtrak Relationship Needs to Change

- Something needs to be done to bring railroads to the table and create ways for them to be engaged as true partners
- Planning/implementation horizon must be shorter than decades
- A more compelling reason other than “It’s in the Amtrak law”

Questions

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