

Linking the Wolverine & Keystone Corridors



...and 12.5 million people in 6 top-100 markets!

2016



Why link up these two rail corridors?

- Cost-effective Midwest-East Coast linkage
- Existing Amtrak stations, PTC & infrastructure
- Favorable right-of-way owners
- High enroute population



Why link up these two rail corridors?

- 12.5 million people
- Six top-100 markets
- 300-mile rail corridor

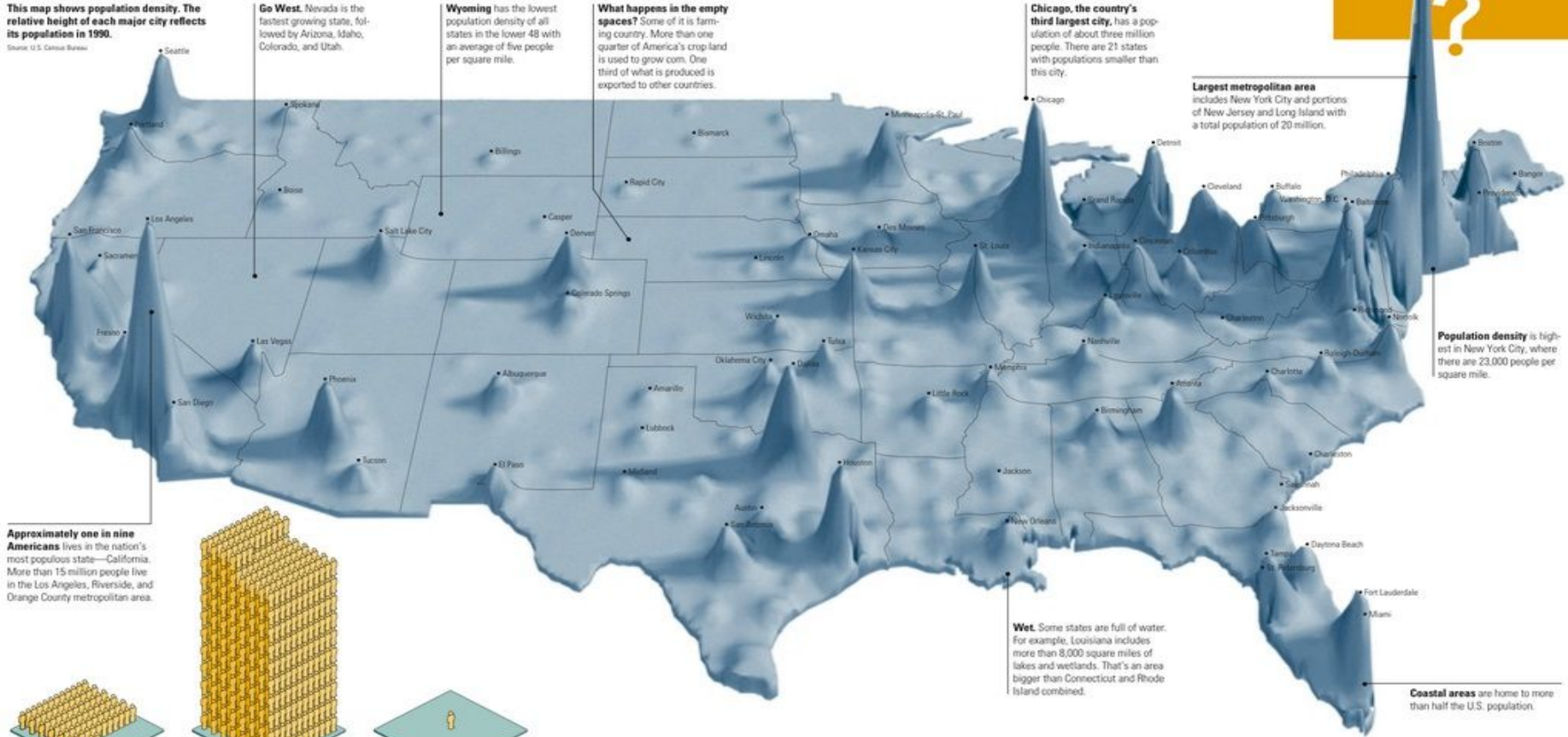


Why link up these two rail corridors?

The population of the United States is not distributed evenly. Instead, we tend to bunch up in communities, leaving the spaces in between more sparsely inhabited. Most Americans live in or near cities; today 53 percent live in the 20 largest cities. 75 percent of all Americans live in metropolitan areas.

This map shows population density. The relative height of each major city reflects its population in 1990.

Source: U.S. Census Bureau



Go West. Nevada is the fastest growing state, followed by Arizona, Idaho, Colorado, and Utah.

Wyoming has the lowest population density of all states in the lower 48 with an average of five people per square mile.

What happens in the empty spaces? Some of it is farming country. More than one quarter of America's crop land is used to grow corn. One third of what is produced is exported to other countries.

Chicago, the country's third largest city, has a population of about three million people. There are 21 states with populations smaller than this city.

Largest metropolitan area includes New York City and portions of New Jersey and Long Island with a total population of 20 million.

Population density is highest in New York City, where there are 23,000 people per square mile.

Wet. Some states are full of water. For example, Louisiana includes more than 8,000 square miles of lakes and wetlands. That's an area bigger than Connecticut and Rhode Island combined.

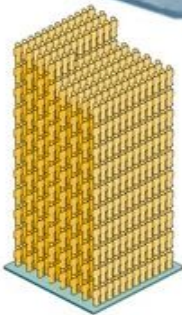
Coastal areas are home to more than half the U.S. population.

Population Distribution

*Where do we live?
Where don't we live?*



Approximately one in nine Americans lives in the nation's most populous state—California. More than 15 million people live in the Los Angeles, Riverside, and Orange County metropolitan area.



New Jersey is the most densely populated state with an average of more than 1,000 people per square mile.



Alaska is a sparsely populated state with an average of one person per square mile.



Distributing our population evenly would put an average of 76 people per square mile.



ALL ABOARD OHIO!

Existing transportation options – DRIVING

of households without cars is rising in major cities in the corridor (Census, Brookings, UofM TRI):

- Pittsburgh – 30% of no-car households (11% in metro)
- Detroit – 26% (8% in metro area)
- Cleveland – 25% (10% in metro area)
- Youngstown – 18% (7% in metro area)
- Toledo – 15% (8% in metro area)
- Akron – 13% (7% in metro area)

That's 1 million people in this travel corridor without cars. Many other households share only one car.



Existing transportation – GREYHOUND

- **Detroit-Pittsburgh: 2 daily buses/way direct w/out change of bus (only 1 each way 6 am to 12 midnight)**
- **Detroit-Cleveland: 4 daily buses each way (3 run 6 am-12m)**
- **Toledo-Cleveland: 6 daily buses/way direct (4 run 6 am-12 midnight, 2 buses stop in Sandusky, 1 in Elyria)**
- **Cleveland-Pittsburgh: 5 daily buses each way direct (3 each way between 6 am-12 midnight)**
- **Cleveland-Youngstown: 2 daily buses each way (schedule via Akron won't allow full day in Cleveland)**
- **Youngstown-Pittsburgh: 2 daily buses each way (schedule won't allow same-day trips to Pittsburgh)**
- **As recently as 1990 there were twice as many buses. Service to suburbs (Lincoln Park, Cleveland-Puritas RTA, Maple Heights, North Hills) and small towns (Huron, Kent, Warren, New Castle) is no longer available.**



Existing transportation – MEGABUS

- Doesn't offer bus service in this market except for two daily buses each way Cleveland-Toledo (only 1 each way between 6 am-12 midnight).
- Megabus recently offered 2 daily buses each way between Detroit-Toledo-Pittsburgh and 3 each way Cleveland-Akron-Pittsburgh and 3 dailies each way Cleveland-Toledo which attracted good ridership.



Existing transportation options – RTAs

Some regional transit agencies provide longer-distance transportation including:

- **New Castle Area Transit Authority – Route 71 (New Castle-Pittsburgh) 14 buses each way daily Monday-Friday;**
- **Akron Metro Area RTA – Routes X60/X61 (Akron-Cleveland) 13 buses each way per day Monday-Friday;**
- **Portage Area RTA – Routes 101/102 (Kent-Cleveland) 1-2 buses each way/day Sunday-Friday, Routes 81-82 (Kent-Akron) 7 buses each way/day Monday-Friday.**



Existing transportation options – DELTA

- **Detroit-Cleveland: 4 dailies each way, 1-hour flight + terminal time, fares starting at \$300 RT.**
- **Detroit-Pittsburgh: 5 dailies each way, 1:10-hour flight + terminal time, fares starting at \$450 RT.**
- **Detroit-Akron/Canton: 4 dailies each way, 1-hour flight + terminal time, fares starting at \$300 RT.**

No other nonstop flights link cities in this corridor!



Existing transportation options – AMTRAK

- **Detroit-Cleveland: 1 daily each way via connecting Amtrak bus Toledo-Detroit.**
- **Detroit-Pittsburgh: 1 daily each way via connecting Amtrak bus Toledo-Detroit.**
- **Toledo-Cleveland: 2 daily trains each way but neither between 6 am-12 midnight.**
- **Cleveland-Pittsburgh: 1 daily train each way but doesn't operate between 6 am-12 midnight.**

In more civilized parts of the world, a corridor this populous would have 100+ mph trains departing every hour.



RECENT ACTIVITY

- Amtrak in 2014 approached NS about extending *Pennsylvanian* to Chicago via Dearborn as a system train
- NS rejected it, citing heavy traffic congestion
- Michigan DOT & Pennsylvania DOT considering additional trains
- MPOs in Toledo, Sandusky, Cleveland/Elyria formed Northern Ohio Rail Alliance (NORA) in ODOT's absence on passenger rail (Eastgate?)
- Ohio Association of Regional Councils (MPOs) joined MIPRC after ODOT withdrew
- At MIPRC's request, FRA to undertake Midwest regional passenger rail planning to prioritize service expansions



What does All Aboard Ohio want?

- AAO to submit input to FRA plan
- AAO analyzed most cost-effective Ohio expansions
- Seeks daily Cardinal, Hoosier extension to Cincinnati
- Section of Cardinal from Russell, KY to Detroit may be best way to restore service to Columbus
- Link up Keystone & Wolverine corridors by:
 - rerouting Capitol/Lake Shore via Dearborn, or
 - extending Pennsylvanian to Chicago via Dearborn
 - and/or extending midday Wolverine to Pittsburgh



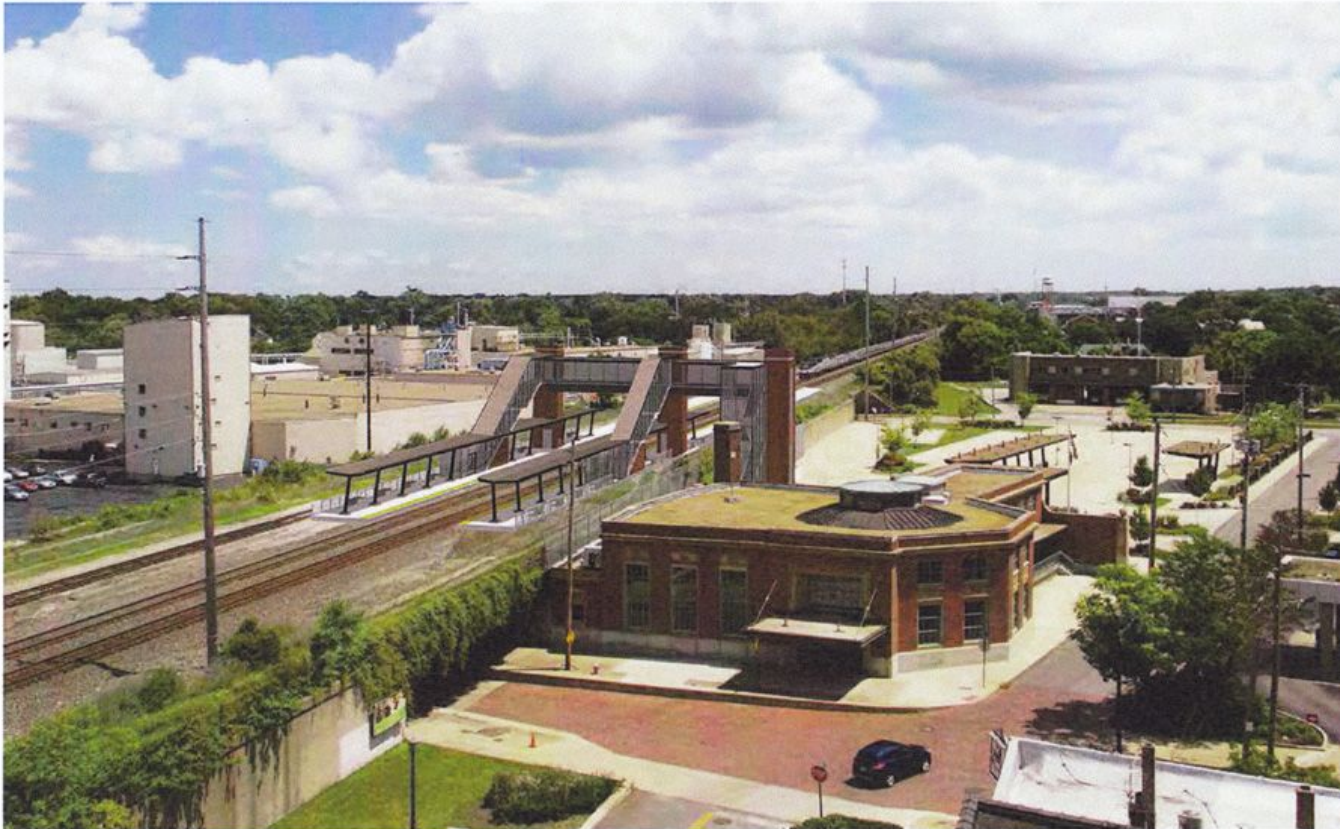
PHASE ONE (3-5 years from now)

- Conduct program-level planning with a service development plan. Follow-on with project-level plans.
- Provide three daily round trips Detroit-Pittsburgh by extending/restructuring Capitol Ltd., Wolverine & Keystone services funded by FRA Sec. 11104 grant. One added set of train equipment needed.
- Top speeds of 79 mph, average speeds of 50-55 mph.
- Route new trains via Ravenna, Youngstown & New Castle (retain Capitol Ltd. via Alliance). Requires restoration of Ravenna Connection track + enroute station facilities.
- Expand stations to process passengers from all main tracks for rail traffic fluidity, travel times and reliability. Add Greyhound and local transit, car sharing, bikes etc. funded by new Fast Act capital grants.



Akron-area station?

CONCEPT RENDERING OF PEDESTRIAN BRIDGE



Lorain County | TRANSPORTATION PASSENGER STATION



LOOKING EAST W/ NEW PLATFORMS | 39

Hudson station: \$10 million = 2 platforms + grade-separated ADA access eg. Elyria, OH



Akron-area station?



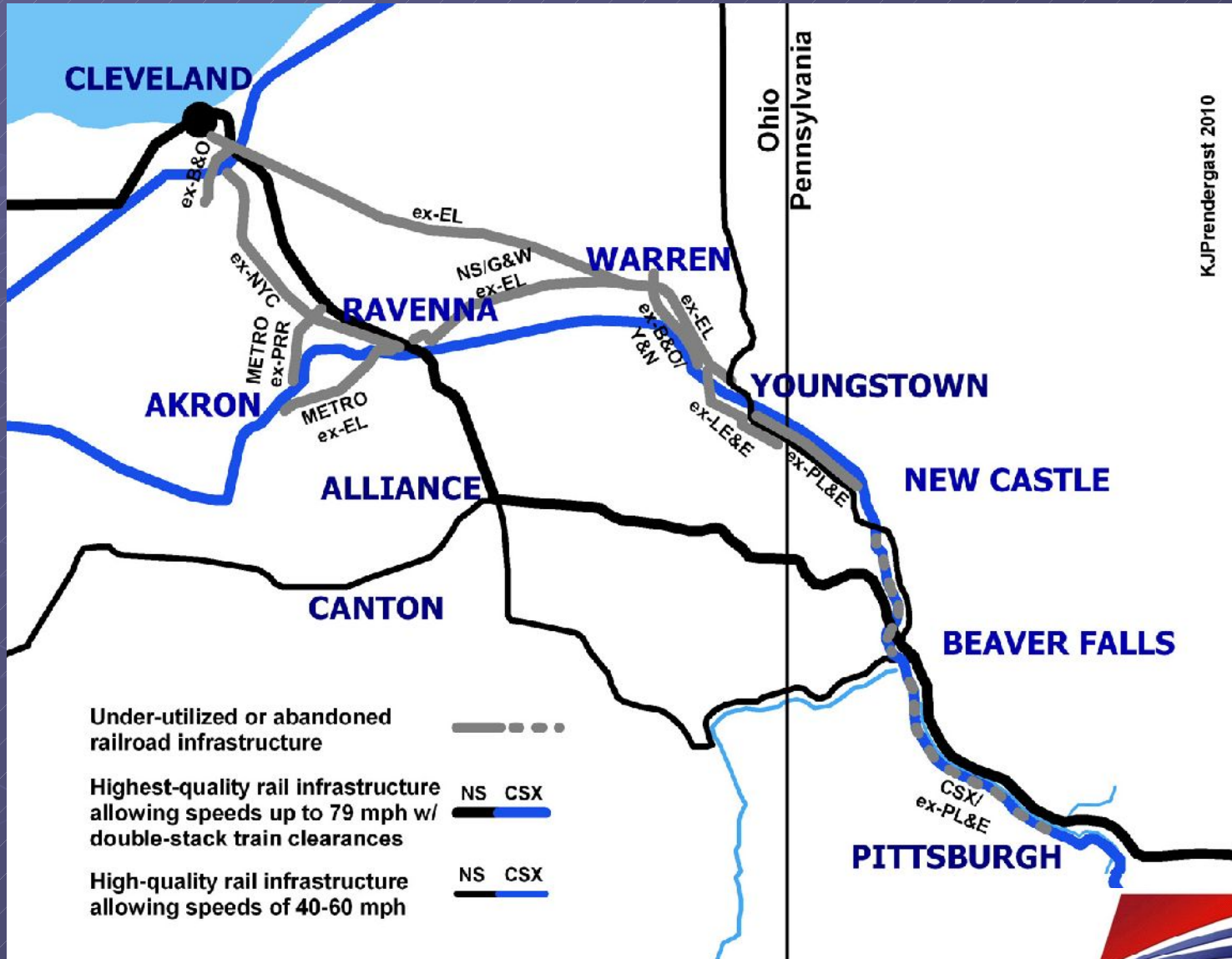
**Ravenna station: \$7 million = 1 platform + restored
3,700-foot CSX-NS connection track & service to
Youngstown and New Castle**



Ravenna Connection



Cleveland – Pittsburgh segment



K.J.Prendergast 2010



Stations



Stations

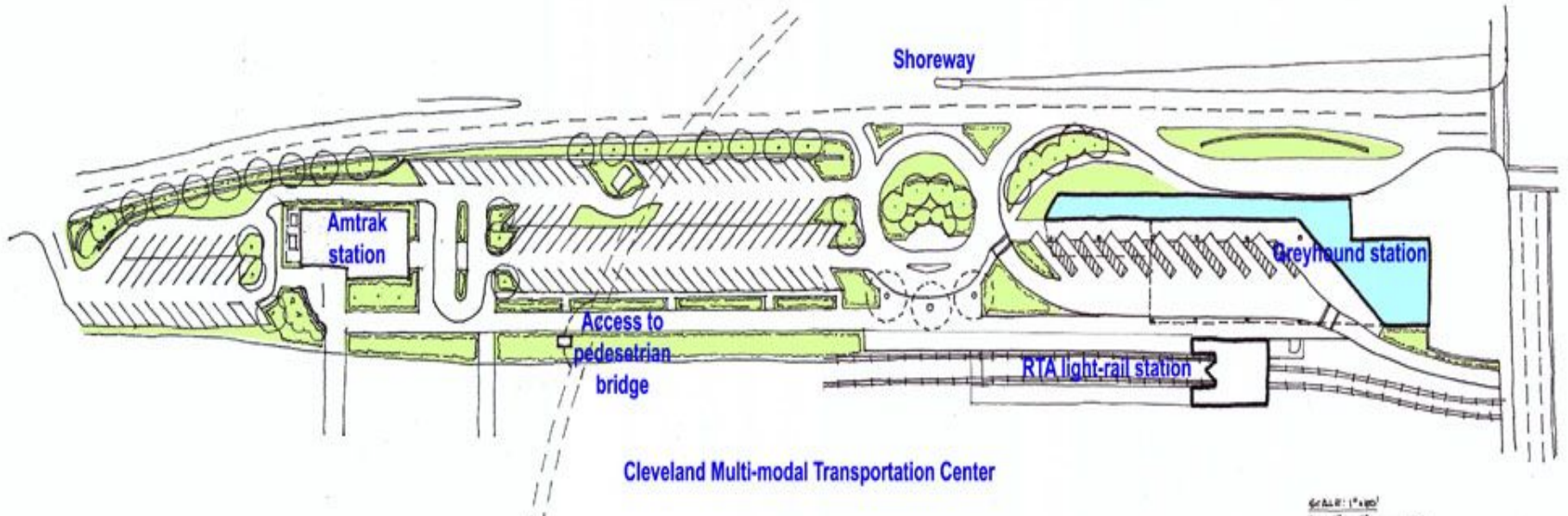
YOUNGSTOWN



SANDUSKY



Stations



CLEVELAND



Phase 1 sample timetable

353	49	29	45	43			◀ Train Number ▶		352	48	30	42	44
Daily	Daily	Daily	Daily	Daily			◀ Days of Operation ▶		Daily	Daily	Daily	Daily	Daily
Read Down					Miles				Read Up				
	2 15P				0	Dp	Boston, MA South Station	Ar		2 30P			
	6 10P		1 44P	9 52A	0	Dp	New York, NY Penn Station	Ar		12 45P		4 20P	7 50P
			1 59P	10 09A	10	Dp	Newark, NJ	Dp				4 00P	7 30P
			2 34P	10 44A	58	Dp	Trenton, NJ	Dp				3 26P	6 56P
			3 05P	11 15A	91	Ar	Philadelphia, PA 30th Street Station	Dp				2 55P	6 25P
			3 35P	11 42A		Dp		Ar				2 25P	5 55P
			4 05P	12 12P	110	Dp	Paoli, PA	Dp				1 54P	5 54P
			4 45P	12 52P	159	Dp	Lancaster, PA	Dp				1 10P	4 40P
			4 59P	1 06P	177	Dp	Elizabethtown, PA	Dp				12 53P	4 23P
			5 20P	1 26P	195	Ar	Harrisburg, PA	Dp				12 35P	4 05P
			5 30P	1 36P		Dp		Ar				12 25P	3 55P
			6 40P	2 46P	256	Dp	Lewistown, PA	Dp				10 51A	2 21P
			7 16P	3 22P	293	Dp	Huntingdon, PA	Dp				10 14A	1 44P
			7 42P	3 48P	313	Dp	Tyrone, PA	Dp				9 47A	1 17P
			8 00P	4 06P	327	Dp	Altoona, PA	Dp				8 31A	1 01P
			8 54P	5 00P	366	Dp	Johnstown, PA	Dp				8 34A	12 04P
			9 35P	5 41P	403	Dp	Latrobe, PA	Dp				7 51A	11 21A
			9 46P	5 52P	*413	Dp	Greensburg, PA	Dp				7 41A	11 11A
		4 05P			0	Dp	Washington, DC Union Station	Ar			1 55P		
		4 29P			16	Dp	Rockville, MD	Dp			1 11P		
		5 16P			55	Dp	Harpers Ferry, WV	Dp			12 21P		
		5 45P			74	Dp	Martinsburg, WV	Dp			11 51A		
		7 24P			146	Dp	Cumberland, MD	Dp			10 22A		
		9 47P			239	Dp	Connellsville, PA	Dp			7 49A		
6 00A		11 48P	10 59P	7 05P	299	Ar	Pittsburgh, PA	Dp			6 10A	7 00A	10 30A
		11 59P		7 30P	*444	Dp	Penn Station	Ar	11 20P		5 55A		10 05A
7 00A				8 30P	491	Dp	New Castle, PA	Dp	10 10P				8 55A
7 25A		Via Alliance		8 55P	509	Dp	Youngstown, OH	Dp	9 45P		Via Alliance		8 30A
8 00A				9 30P	542	Dp	Ravenna-Kent, OH	Dp	9 10P				7 55A
8 55A	5 50A			10 25P	579	Ar	Cleveland, OH	Dp	8 25P	12 15A	2 45A		7 10A
9 00A	6 00A	2 59A		10 30P		Dp	Lakefront Station	Ar	8 20P	11 59P	2 35A		7 00A
9 26A	6 30A	3 29A		10 58P	604	Dp	Elyria, OH	Dp	7 48P	11 25P	2 05A		6 25A
9 59A	7 03A	4 02A		11 33P	639	Dp	Sandusky, OH	Dp	7 15P	10 51P	1 30A		5 50A
11 00A	8 09A	5 08A		12 45A	686	Ar	Toledo, OH	Dp	6 25P	10 00P	12 40A		5 00A
11 05A	8 25A	5 22A		1 15A		Dp	MLK Plaza Station	Ar	6 20P	9 50P	12 30A		4 50A
12 15P	9 45A					Ar	Detroit, MI Woodward Station	Dp	5 10P	8 00P			
12 40P	10 00A	7 30A		3 35A		Dp	Dearborn, MI	Dp	4 38P	7 40P	11 00P		3 20A
1 08P	10 50A	8 00A		4 10A		Dp	Ann Arbor, MI	Dp	4 10P	6 55P	10 30P		2 50A
2 26P		9 20A		6 20A		Dp	Kalamazoo, MI	Dp	2 50P		9 10P		1 30A
	9 15A				740	Dp	Bryan, OH	Dp		8 40P			
	9 43A				765	Dp	Waterloo, IN-Ft Wayne	Dp		8 15P			
	10 35A				818	Dp	Elkhart, IN	Dp		7 22P			
	10 59A				835	Dp	Scuth Bend, IN	Dp		6 59P			
3 30P	11 59A	10 30A		7 30A	919	Ar	Chicago, IL Union Station	Dp	12 50P	4 30P	6 10P		10 30P



PHASE TWO (4-6 years after phase 1)

- Two additional daily round trips (five total) Detroit-Pittsburgh requiring two new train sets.
- Operating cost funded by FRA Sec. 11104 grant and capital cost of train equipment funded by a lease or third-party private-sector partner.
- Top speeds of 90 mph, average speeds of 60-65 mph, permitted by PTC and grade-crossing circuits lengthened using USDOT Sec. 1108 grants.
- Add capacity (sidings, connections, crossovers, etc) to passenger route or to alternate, parallel routes for diversion of slower freight traffic as determined by program-level planning.
- Additional station facility enhancements and station-area developments per Subtitle F RRIF loans.



PHASE THREE (7-15 years after phase 1)

- Provide three additional daily round trips (eight total) Detroit-Pittsburgh with new sets of train equipment.
- Top speeds of 110 mph, average speeds of 65-75 mph.
- Long sections of dedicated passenger-only track.
- Stations are multi-modal centerpieces of downtown office, housing, hotel, retail and other developments.



Let's work together on linking PA-OH-MI!



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