Tech Belt Tracks

Using passenger rail to energize Tech Belt economic and transport assets

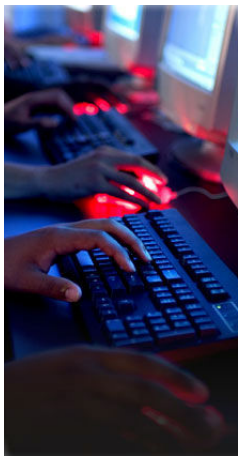
Cleveland – Youngstown – Pittsburgh

ALLABOARDOHIO!

JUNE 2010

Overview

Elected officials and economic development leaders are uniting to nurture the creation of homegrown technology jobs in the Cleveland – Youngstown – Pittsburgh Tech Belt. While job creation in this region has been a decades-long struggle, the Tech Belt Initiative (TBI) is showing some early successes by capitalizing on the assets and strengths that the region already possesses. Thus, tech-based economic development has focused on the region's linear collection of biomedical, health care, advanced manufacturing and higher education.



Aiding homegrown technology companies and job creation requires access to capital, access to knowledge, reduced costs of doing business and collaboration. Despite economic stagnation over the past several decades, the Cleveland – Youngstown – Pittsburgh region possesses many unique civic, educational, healthcare and industrial institutions.

These are a legacy of the region's industrial boom during the Gilded Age of the 19th and 20th centuries. Such institutions represent fertile ground for growing a technology-based economy through innovation, collaboration and production.

Another legacy of the region's industrial boom years is its extensive and underutilized transportation infrastructure. This report will focus on the rail/transit elements of that infrastructure and how they can play a direct and powerful role in aiding TBI strategies.

The TBI strategies are:

- Identify and accelerate the Greater Cleveland/Greater Pittsburgh synergies to better develop bioscience and other high-tech company formation and capitalization.
- Identify organizations, resources and thought leaders who could benefit from exploiting opportunities in the Tech Belt region.
- In the near-term, develop and implement a focused marketing/outreach plan to key constituents outside the region explaining the strengths and opportunities in the region.
- Organize, lead and market discussions, conferences and meetings among high-tech industry leaders, state and local government, institutions and the mega-regions' thought leaders.
- Attract venture capitalists, talent, new businesses and sources of economic growth.

Recent Tech Belt Initiative accomplishments

The TBI strategy has enjoyed early successes, such as the synergies between the Cleveland Clinic and University Hospital health systems, Case Western Reserve University, and numerous new-start biomedical companies being created in Cleveland. Or, there is the relationship between Youngstown State University, the Youngstown Business Incubator and fast-emerging computer technology firms in Youngstown. Additionally, the University of Pittsburgh, Carnegie Mellon University and other institutions of higher learning nearby are collaborating with healthcare and advanced manufacturing firms at the Pittsburgh Tech Park and elsewhere.

Cleveland-Pittsburgh collaboration – In 2007, leaders of two biotechnology organizations, BioEnterprise Corp. of Cleveland and the Pittsburgh Life Sciences Greenhouse, joined forces to promote Cleveland and Pittsburgh as a single biotechnology corridor. Both organizations are jointly seeking investments and establishing connections between biotech companies and organizations in each region. Such linkages will help biotech companies gain investments, influence and resources over other regions in North Carolina and Minnesota. The technology offices of major institutions met to review synergetic technologies and, by the end of its first year, more than 20 bioscience business collaborations had already resulted.

A passenger rail link between the cities would "shrink the 130-mile gap between each downtown" and further enhance opportunities for collaboration. This "Tech Belt Tracks" white paper is a result of Congressmen Ryan's and Altmire's leadership and vision for greater job-creating collaboration between the CYP cities.

A 2007 Crain's Cleveland Business article, for instance, that a Pittsburgh company could conduct clinical trials at the Cleveland Clinic and a Cleveland business looking to license robotics technology could be put in touch with the Robotics Institute at Carnegie Mellon University. Such collaboration was intended to serve as a model that could be expanded to include other technology industries such advanced manufacturing, computer-information technologies, life sciences and others. That goal is being achieved.

When the Cleveland-Pittsburgh collaboration was announced, U.S. Reps. Tim Ryan of Niles (D-17) and Jason Altmire of McCandless, PA (D-4) said **a passenger rail link between the cities would "shrink the 130-mile gap between each downtown" and further enhance opportunities for collaboration. This "Tech Belt Tracks" report is a result of Congressmen Ryan's and Altmire's leadership and vision for greater job-creating collaboration between the CYP cities.**

TechBelt Energy Innovation Center – Other recent developments include an agreement by Tech Belt leaders on utilizing NorTech, a regional nonprofit economic development organization and catalyst for growing technology industries in Northeast Ohio, to seek a five-year $129.7 million federal grant to create an Energy Regional Innovation Cluster

(E-RIC) in the Tech Belt corridor. The Warren incubator – now called the TechBelt Energy Innovation Center – would serve as the center for engineering, prototype development and testing.

Regional Vision Roadmapping – NorTech was awarded in May a $300,000 grant by the Economic Development Administration of the U.S. Department of Commerce. This marks the first competitive federal grant to NorTech and Northeast Ohio for the development of a regional innovation strategy for the advanced energy industry. The funding is key to the ongoing efforts of NorTech Energy Enterprise, an initiative focused on accelerating commercial activity in the region's advanced energy industry.

There has been significant investment and momentum in many advanced energy sectors in Northeast Ohio. The EDA grant will be used to fund a series of roadmaps that will develop a regional vision in four emerging globally-competitive advanced energy sectors: Energy Storage, Smart Grid, Transportation Electrification, and Biomass/Waste-to-Energy. NorTech will continue to work broadly within the region's advanced energy cluster while leading the roadmapping process.

To develop the roadmaps, NorTech Energy Enterprise will engage regional industry, academia, government, and funding partners in a series of workshops to gain valuable insight and input. The process will help identify the unique strengths of the region in the specific sectors; characterize the global market drivers and opportunities; assess the competitive landscape and outline the regional opportunities. The roadmapping process will be completed in early 2011.

Third Frontier-Wright Center: On May 27, the Ohio Third Frontier Commission announced $24 million in awards for Wright Center Program Projects and another $8 million for Success and Pre-Seed Funds. Of the funds announced, six Northeast Ohio organizations were awarded a combined total $14 million from Ohio's Third Frontier.

Wright Center Program Project recipients include:

Case Western Reserve University: $3 million to develop wind power supply chain products and establish a wind energy research center at the university.

Cleveland Clinic Foundation: $3 million to develop and commercialize products made from nitinol, a nickel titanium alloy.

Stark State College of Technology: $2.8 million for expansion of Stark State's fuel cell test capabilities in support of Rolls-Royce's one megawatt solid oxide fuel cell development program.

Success and Pre-Seed Fund recipients include:

JumpStart: $2.6 million for its existing Pre-See Fund project;
Lorain County Community College: $1.5 million for the LCCC Innovation Fund;
BioEnterprise: $600,000 for Accelerating Biomedical Start-ups in Northeast Ohio Fund III project; and
Cleveland Clinic Foundation: $800,000 for BioValidation Fund II project.

At issue: need for more, better physical networks

The region's new shoots of growth are early examples of successful Tech Belt strategies. But note that many of the previous examples are localized. Too often the benefits from Tech Belt newborns do not wander far from their cradles. Instead, their beneficial impacts decrease rapidly with distance from the incubating institutions. In some instances the benefits are limited to a few city blocks.

Changes to land use and transportation policies, both public and private, would allow for more physically connected concentrations of Tech Belt nodes to help address synergistic shortcomings.

A likely reason for this is that their suppliers, collaborators and supporters may be so dispersed in surrounding suburbs and exurbs that opportunities for in-person social interaction that fosters casual, happenstance idea-sharing are extremely limited in numerous communities.

Telecommunications do help, but they are not an equal substitute for physical interaction, in-person conversation, drawing schematics on the back of a napkin over coffee, and personally inspecting equipment and facilities. **Changes to land use and transportation policies, both public and private, would allow for more physically connected concentrations of Tech Belt nodes to help address synergistic shortcomings.**

Low-income and working-class families settled in valleys next to the steel mills where they worked. Although the mills are gone, many residents remain – as do legacy rail corridors.

Furthermore, the early shoots of growth in the Tech Belt have yet to benefit many low-income residents of the Cleveland – Youngstown – Pittsburgh region. Much of the region's low-income residents are clustered in/near the industrial valleys, near the factories and suppliers that once fed them and their families. After the mills went away, so did their good paychecks. Service jobs more than replaced the lost industrial jobs in sheer numbers but not in average pay, according to 30-year data (1970-2000) from the Bureau of Labor Statistics.

Many low-income and working class residents can't reach suburban job opportunities because they either cannot afford cars or must share one car among multiple wage earners. According to the U.S. Census the number of households without cars is 29% in Pittsburgh, 25% in Cleveland and 18% in Youngstown. Yet in or near these former industrial valleys and their residents are civic and educational institutions which offer opportunities for change and advancement as envisioned in the TBI strategies.

In auto-dependent areas, land use patterns are typically spread out to accommodate the volume, speed and physical geometry of car usage. Wide streets, large surface parking lots and subdivided land uses that discourage walking also reduce in-person social interaction as well as casual and more frequent idea-sharing. The size of parking lots and zoning to subdivide land uses are established by local governments while the design of roads and the levels of spending for them are established by all levels of government.

Pedestrian-friendly districts create urban vibrancy and density that is necessary to support greater in-person networking and idea-sharing as well as creating synergies with low-cost rail/transit services.

It should also be known that governments continue to add new lane-miles in the CYP region despite its stagnant population growth. That has exacerbated suburban sprawl, reduced the opportunities for in-person interaction, neglected roads and bridges in existing communities, and created more infrastructure to be financially supported by our stagnant population.

By comparison in areas where there is a mix of cars, plus attractive rail and/or transit services, local governments often support this diversity with zoning and other land use policies that allow more compact, mixed-use walkable neighborhoods.

Downtown Hudson, OH

Buildings are located "on the sidewalk" with retail, restaurant or other publicly accessible uses at the street level and housing, offices, educational/training facilities and/or hotels on upper floors. Parking is often placed next to or behind buildings in shared surface lots. Or parking is concentrated into centrally located structured decks which can be paid parking or free – jointly supported by local businesses. The result is often an increase in street-level pedestrian activity that increases the cost-effectiveness of rail/transit in serving that area and creates opportunities for interaction, networking and idea-sharing.

The importance of in-person networking is why dense cities have fostered markets, commerce and innovation for thousands of years. They offer critical mass while car-dominated sprawling development patterns lack such critical mass and hinder in-person networking.

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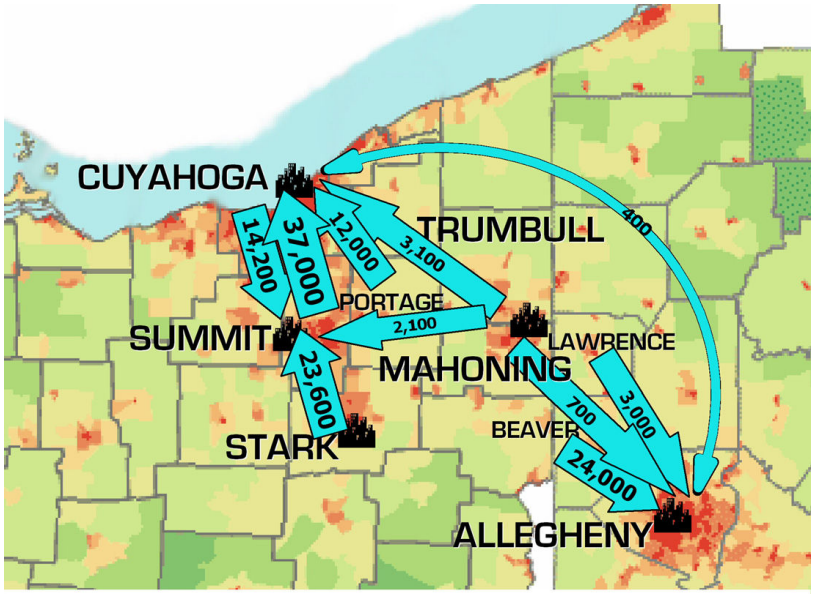
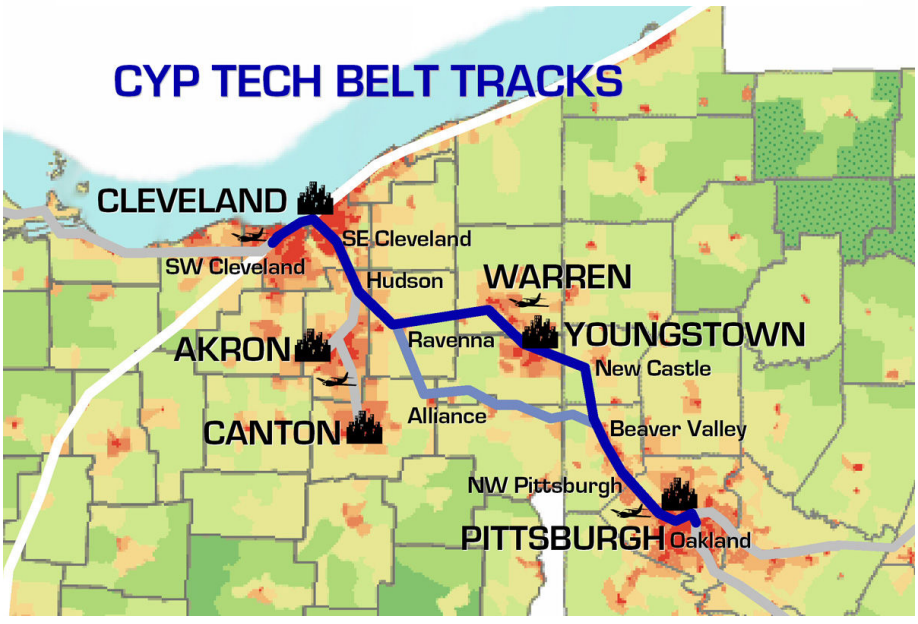


CYP WORK TRIPS PER DAY*

SOURCE: U.S. Census, Journey to Work county trip data tables, 2000
NOTE: About 10-30 percent of work-trips are downtown-bound; rail typically attracts 20-50 percent of commutes over 25 miles.
* Does not include weekend trips home from colleges, regular healthcare visits, shopping, attending sporting events, etc.



Rail's Role

Also located through the industrial valleys of the Cleveland – Youngstown – Pittsburgh corridor – near the many legacy civic and educational institutions – is a web of railroad infrastructure. This legacy infrastructure fed the region's metal-making, oil producing/refining and other industrial sectors decades ago and can serve its new-technology masters tomorrow with freight and passenger rail services that offer low-cost, user-friendly and environmentally benign transport.

Passenger rail offers some intrinsic economic benefits that can and should aid Tech Belt strategies, specifically those involving the need for better networking opportunities. These include:

Low-cost travel – Amtrak fares between Cleveland and Pittsburgh are one-fifth the cost of driving and nearly half that of Greyhound. See fare details later in this report.

Productive travel – Trains let passengers spread out and work while traveling. Patrons can study, surf the Web, text, e-mail, meet, socialize, eat, drink or relax.

Proximity – Rail infrastructure is near most Tech Belt assets including civic, educational, healthcare and industrial institutions plus other transportation facilities and services.

Station-area development – With supportive local land-use policies, train stations can foster compact, mixed-use developments that promote interaction and collaboration.

Youth popularity – College students, young professionals and other young adults are consistently among passenger rail's most frequent users. Youth often drives innovation.

Accessibility – Trains accommodate wheelchair patrons at all stations AND trains must be ADA accessible. Trains also allow passengers to bring their bicycles on board. Maps shown later in this report reveal why bicycle access is so important, especially to younger passengers.

These rail-based benefits offer a lot to the CYP Tech Belt and specifically to the leaders, organizations and institutions seeking to implement initiatives to stimulate more interaction and collaboration among the region's legacy of linear-aligned biomedical, health care, advanced manufacturing and higher education assets.

Low-cost travel

A low cost of doing business is the first priority for most businesses. It is also the first priority for most travelers when considering their modal options. Cost is followed by convenient departures, reliability and then speed. Safety is assumed when passengers weigh their options for booking trips.

Trains are the least expensive way to travel in the CYP Tech Belt but there is only one nightly train in each direction as part of a Chicago-Washington DC route and it doesn't travel via Youngstown.

TRAVEL COSTS
Cleveland – Youngstown – Pittsburgh

Sample round-trip costs for travel in the CYP Corridor (2-week to 2-month advance booking):

CYP travel market	Miles (one-way)	Train*	Bus**	Air***	Car****
Cleveland, OH – Pittsburgh, OH	135	**$24-$47**	$49-$70	$438 to $1,020	$153
Cleveland, OH – Youngstown, OH	70	**$13-$24**	$24-$54	No service	$79
Youngstown, OH – Pittsburgh, PA	65	**$12-$23**	$20-$45	No service	$74

* Amtrak's existing CLE-PGH fares published in May 2010. Fares to Youngstown are estimated.
** Range of Greyhound bus fares. Greyhound has $5 pre-boarding fee at CLE & PGH to assure seating.
*** Continental Airlines fares published in May 2010.
**** AAA and IRS data, 2010.

Productive travel

As regions compete with each other to retain jobs they create, they seek to aid the productivity of their employers. Passenger rail allows businesses to be more productive because, even when the train is slower than driving, travelers can be much more productive on a train. Time is money.

A train traveler between Cleveland and Pittsburgh will enjoy a net time savings of 2 hours over driving and reduce a time/cost barrier between the two cities.

Consider if a fully developed 90-110 mph train service, plus connecting transportation, takes 2½ hours to travel the 135 miles between Cleveland and Pittsburgh. Typical drive time is about 2¼ hours at a 60 mph average speed but can often take longer during construction, bad weather or rush hours. A common misconception is that the train is 15 minutes slower. In reality, the train saves the traveler their entire drive time which is mostly wasted time. But since a business traveler is almost never as productive as they are in their own office, the 15 minutes of the longer train trip is subtracted from the drive time.

Thus a train traveler between Cleveland and Pittsburgh will enjoy a net time savings of 2 hours over driving and reduce a time/cost barrier between the two cities. The Ohio Hub System study released by the Ohio Rail Development Commission in 2007 estimated that a fully developed CYP passenger rail service would attract more than 600,000 riders per year.

The impacts of having few, if any, usable alternatives to driving can be quantified financially too. The U.S. Office of Technology Assessment estimates that the costs of highway traffic congestion now actually equal or exceed the dollars that federal, state and local governments spend on building and maintaining highways each year. The U.S. General Accounting Office reports that productivity losses from highway congestion cost the nation some $100 billion annually.

The 2009 Urban Mobility Report published by the Texas Transportation Institute says the 2007 impacts from highway traffic in the CYP Corridor were:

Cleveland – 12 million person-hours of delay costing $242 per motorist
Pittsburgh – 15 million person-hours of delay costing $300 per motorist

No data was available from the Texas Transportation Institute for other communities between Cleveland and Pittsburgh.

Downtown Cleveland

^Downtown Youngstown

Downtown Pittsburgh >

Proximity

Although many important, heavily used CYP rail lines were ripped out after Rust Belt industries shut down, not all rail infrastructure is lost. Nearly all rail corridors, including unused rights of way, remain largely in place. Some rail lines were rebuilt and repurposed to serve growing long-distance freight traffic flows such as transcontinental double-stack trains. These improvements are continuing, such as with CSX's National Gateway corridor from Norfolk, VA through Washington DC, Pittsburgh, Youngstown and then fanning out to Midwest intermodal distribution centers.

Passenger trains continue to use the only intact rail corridor linking Cleveland and Pittsburgh which is via Alliance, a route with 1/12th the population of the Youngstown route. There are high-quality rail corridors that can be pressed into use for introductory

CYP passenger rail service as well as underutilized or abandoned rail rights of ways which may be used over the long-term for more frequent, higher-speed passenger trains.

Passenger rail technologies such as advanced propulsion, tilt-train mechanisms and positive train control systems can yield high point-to-point average speeds on existing rail corridors without having to incur huge expenditures or long delays in acquiring new rights of way for newly built high-speed rail corridors. **Typically the time required for planning, funding and constructing totally new high-speed rail corridors elsewhere in the world has ranged from 10-20 years.** However high-speed rail with speeds of 110-220 mph should remain a long-term goal for the CYP Corridor.

Rail corridors near Tech Belt assets can be stitched together in less time so modern 79-90 mph passenger rail services can link each of those assets. Railroad rights of way pass next to or through downtown central business districts, convention facilities, technology marketplaces, tourist destinations, transit corridors and are within a short connecting transit trip from both international airports in the corridor.

But in many instances the potential CYP rail corridor(s) pass within a few feet of some of the region's most important travel destinations, traffic sources and economic development generators.

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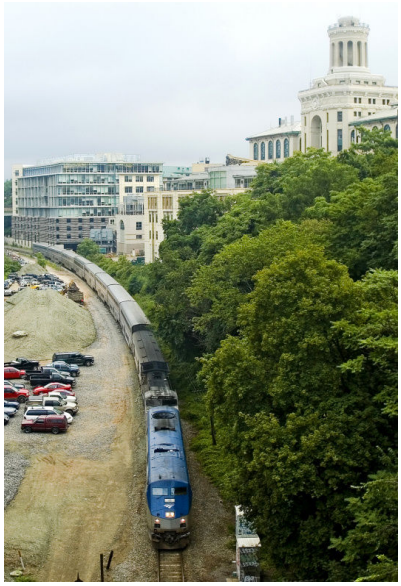
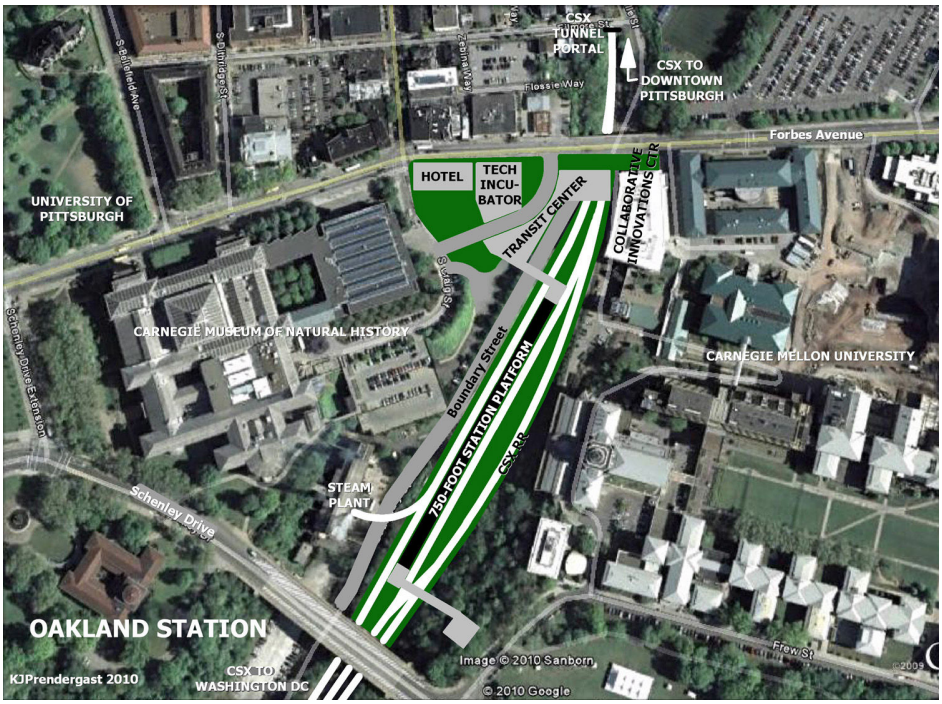
Rail corridors near Tech Belt assets can be stitched together in less time so modern 79-90 mph passenger rail services can link each of those assets.

Also many of the region's largest and best-known colleges and universities are located in older, dense and walkable communities that grew up at or near railroad stations and along rail transit lines during the industrial boom years. Here is an example:



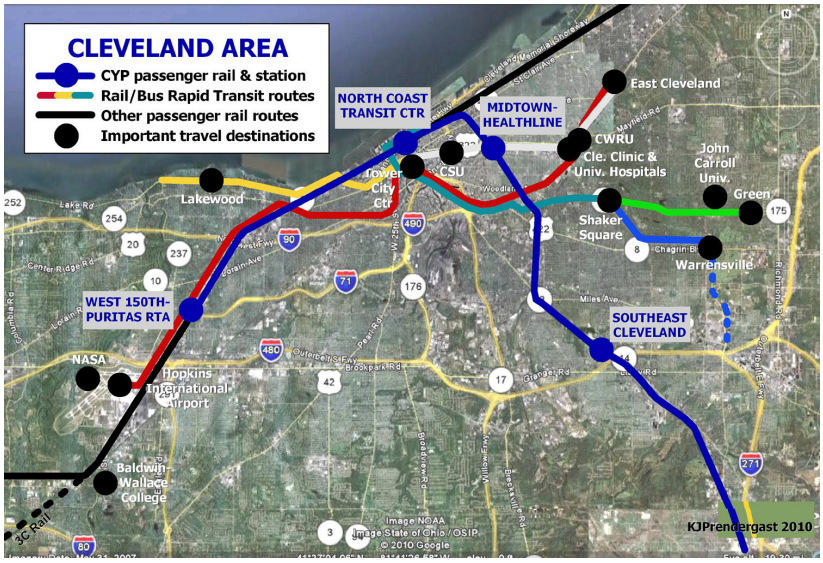
Twice each day, Cleveland-Pittsburgh passenger trains roll by Carnegie Mellon University's Hamerschlag Hall and the Collaborative Innovation Center but don't stop. The trains, part of an overnight Chicago-Washington DC route, also do not travel via Youngstown. Addressing these missed connections and opportunities will require CYP interests to sponsor and design the region's rail passenger services to meet its unique transportation and economic development needs. Photo was taken July 23, 2008 by John Ireland.

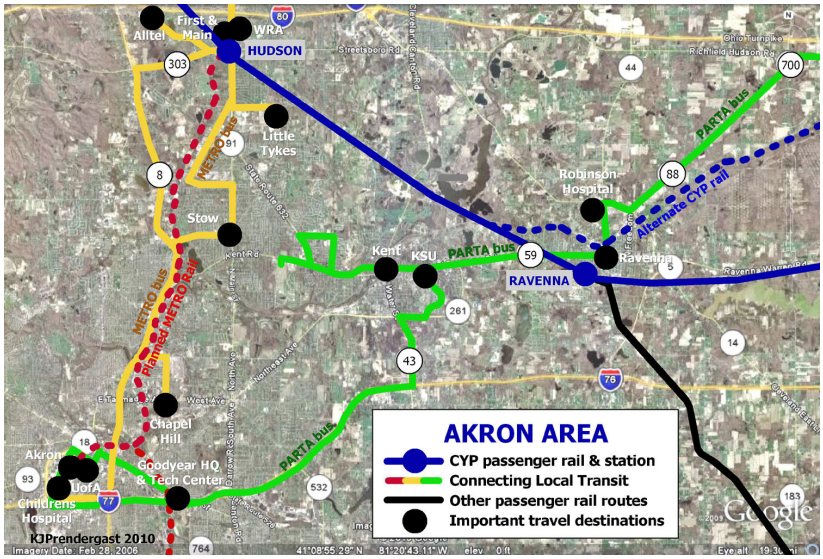


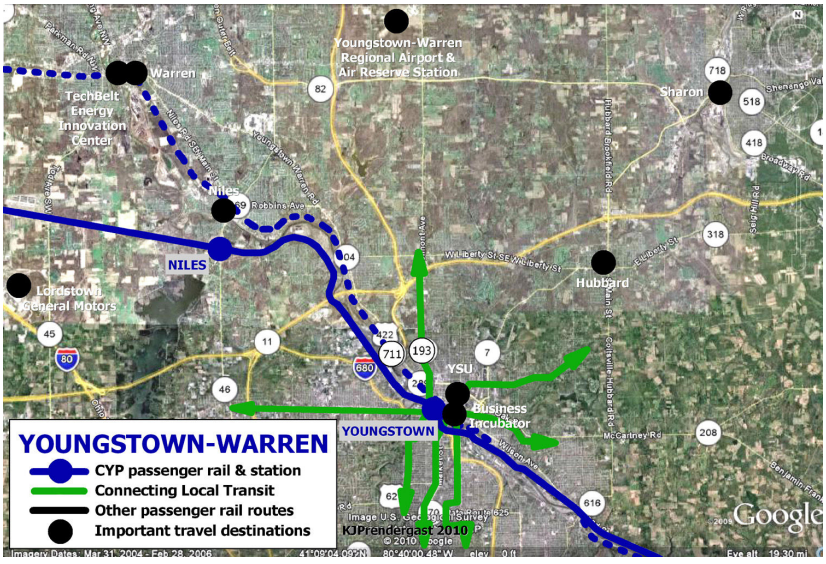
Possible Oakland Station in Pittsburgh for intercity rail and intracity transit.

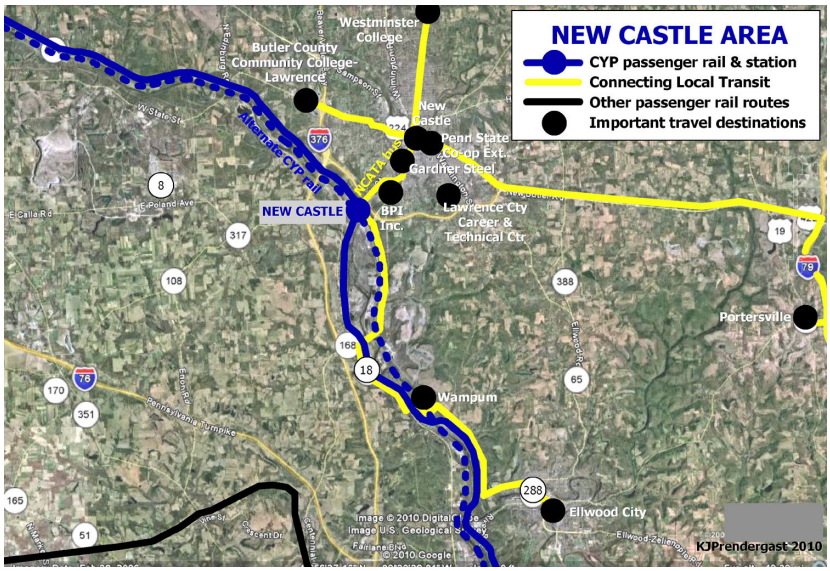
Unlike many other passenger rail services in the nation, the 135-mile CYP rail corridor is proximate to two international airports and numerous Central Business Districts in three Metropolitan Statistical Areas. A fourth MSA, Greater Akron, may be served by one or two stations on its northeast side with direct access to Akron's CBD and University of Akron via existing transit routes or planned commuter rail service on the Hudson-Akron-CAK Airport-Canton rail line owned by the Akron Metro Regional Transit Authority.

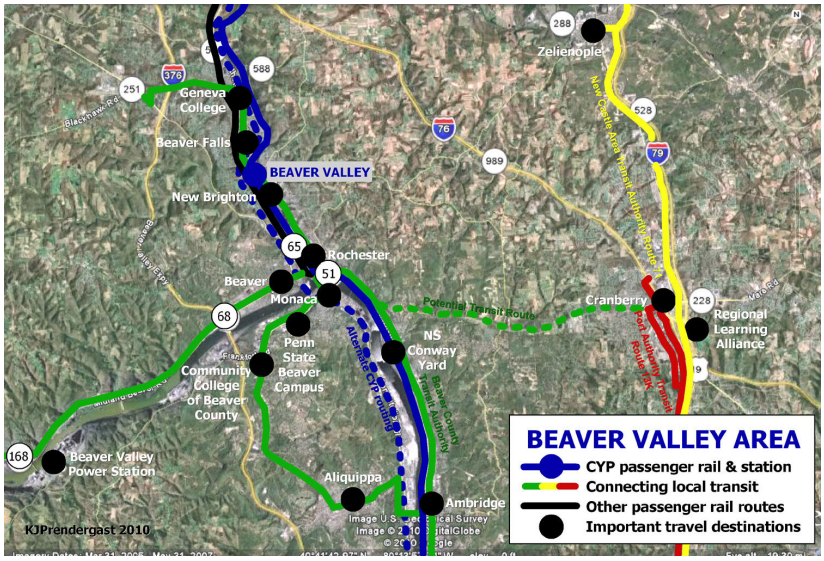
The following maps clearly demonstrate the proximity of the CYP rail corridor(s) to many Tech Belt assets. Indeed, this also suggests the rail corridor(s) is a mostly untapped Tech Belt asset as well.

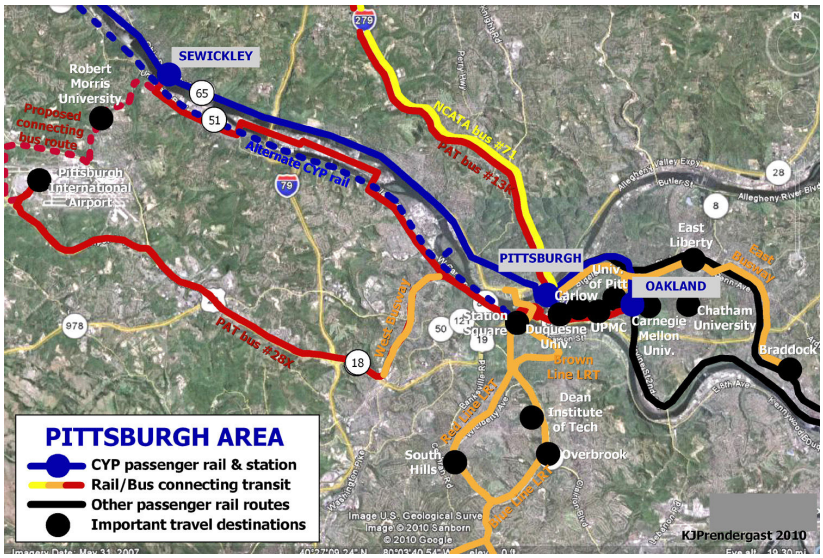

CLEVELAND AREA
CYP passenger rail & station
Rail/Bus Rapid Transit routes
Other passenger rail routes
Important travel destinations
NORTH COAST TRANSIT CTR
MIDTOWN-HEALTHLINE
East Cleveland
CWRU
Cle. Clinic & Univ. Hospitals
John Carroll Univ.
Green
Shaker Square
Warrensville
Lakewood
Tower City Ctr
CSU
WEST 150TH-PURITAS RTA
SOUTHEAST CLEVELAND
NASA
Hopkins International Airport
Baldwin Wallace College
KJPrendergast 2010


First & Main
WRA
HUDSON
Little Tykes
METRO bus
Stow
Kent
KSU
PARTA bus
Robinson Hospital
Alternate CYP rail
RAVENNA
Planned METRO Rail
Chapel Hill
Goodyear HQ & Tech Center
Akron
UofA
Childrens Hospital
AKRON AREA
CYP passenger rail & station
Connecting Local Transit
Other passenger rail routes
Important travel destinations
KJPrendergast 2010


Youngstown-Warren Regional Airport & Air Reserve Station
Warren
TechBelt Energy Innovation Center
Sharon
Niles
NILES
Hubbard
Lordstown General Motors
YSU
Business Incubator
YOUNGSTOWN
YOUNGSTOWN-WARREN
CYP passenger rail & station
Connecting Local Transit
Other passenger rail routes
Important travel destinations
KJPrendergast 2010

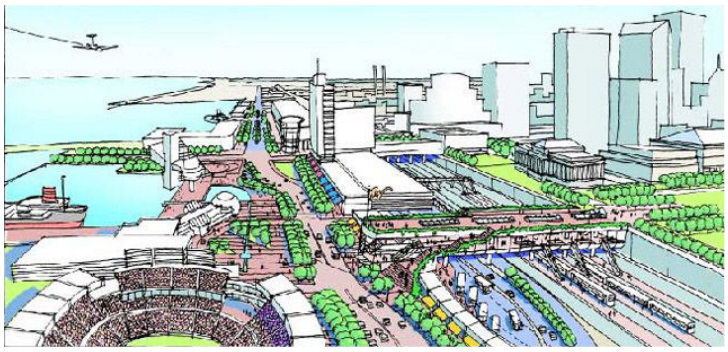

NEW CASTLE AREA
CYP passenger rail & station
Connecting Local Transit
Other passenger rail routes
Important travel destinations
Westminster College
Butler County Community College-Lawrence
New Castle
Penn State Coop Ext.
Gardner Steel
BPI Inc.
Lawrence Cty Career & Technical Ctr
NEW CASTLE
Alternate CYP rail
NCATA bus #21
Portersville
Wampum
Ellwood City
KJPrendergast 2010


BEAVER VALLEY AREA
CYP passenger rail & station
Connecting local transit
Other passenger rail routes
Important travel destinations
Zelienople
Geneva College
Beaver Falls
BEAVER VALLEY
New Brighton
Rochester
Beaver
Monaca
Penn State Beaver Campus
Community College of Beaver County
Beaver Valley Power Station
Aliquippa
Ambridge
NS Conway Yard
Potential Transit Route
Cranberry
Regional Learning Alliance
Alternate CYP routing
Beaver County Transit Authority
KJPrendergast 2010

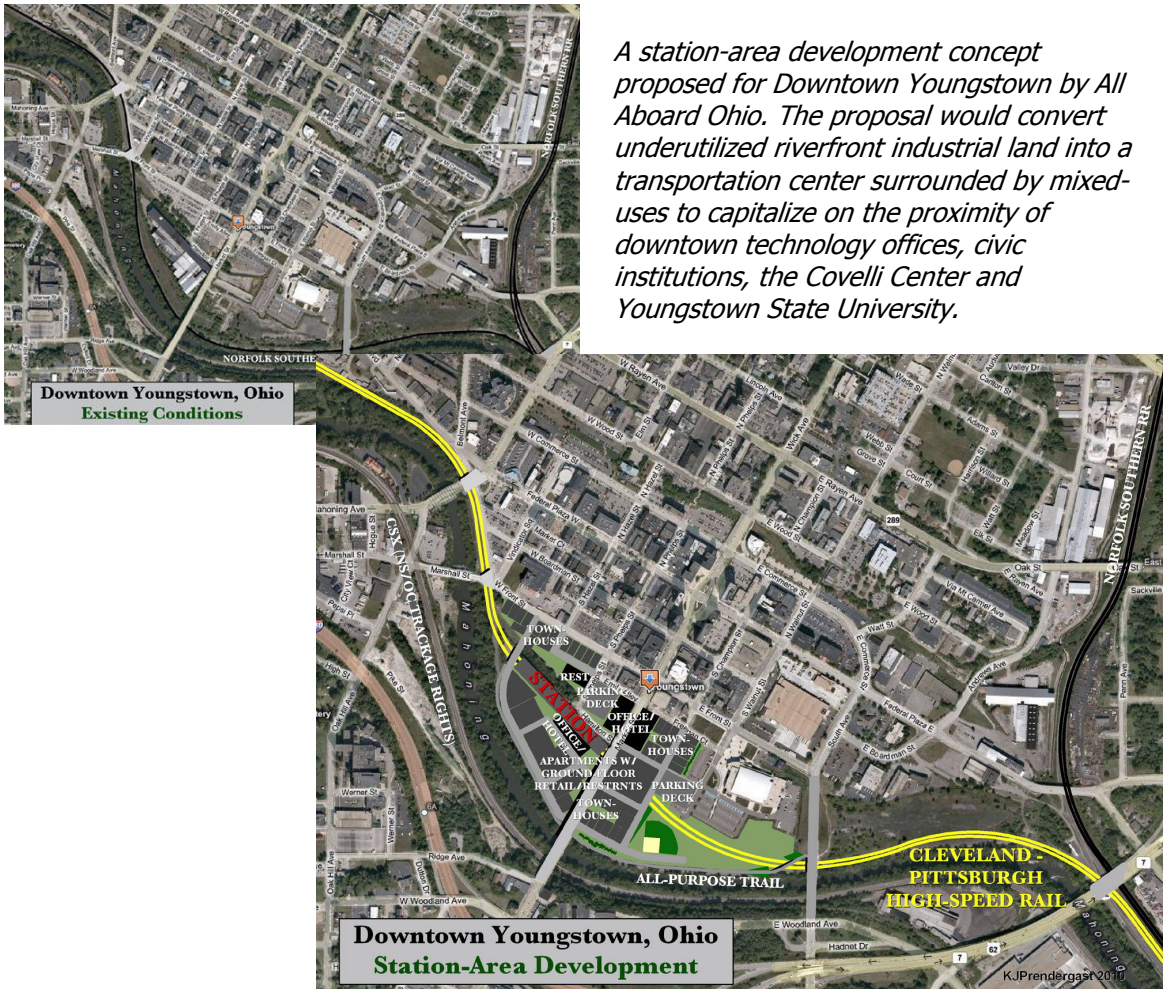

PITTSBURGH AREA
CYP passenger rail & station
Rail/Bus connecting transit
Other passenger rail routes
Important travel destinations
SEWICKLEY
Robert Morris University
Proposed connecting bus route
Pittsburgh International Airport
Alternate CYP rail
NCATA bus #21
PAT bus #39
PAT bus #28X
PITTSBURGH
OAKLAND
East Liberty
Carlow
Station Square
Duquesne Univ.
UPMC
Carnegie Mellon Univ.
Chatham University
Braddock
Busway
Brown Line LRT
Dean Institute of Tech
Overbrook
South Hills
KJPrendergast 2010

Station-area development

Proximity is related to station-area development. Many potential station-area developments in the CYP rail corridor are enabled by their proximity to existing and planned Tech Belt assets. Supportive local land-use policies will allow train stations to leverage the strengths of those existing and planned assets by fostering compact, mixed-use developments that further enhance in-person interaction, networking, collaboration, idea-sharing and ultimately, innovation.

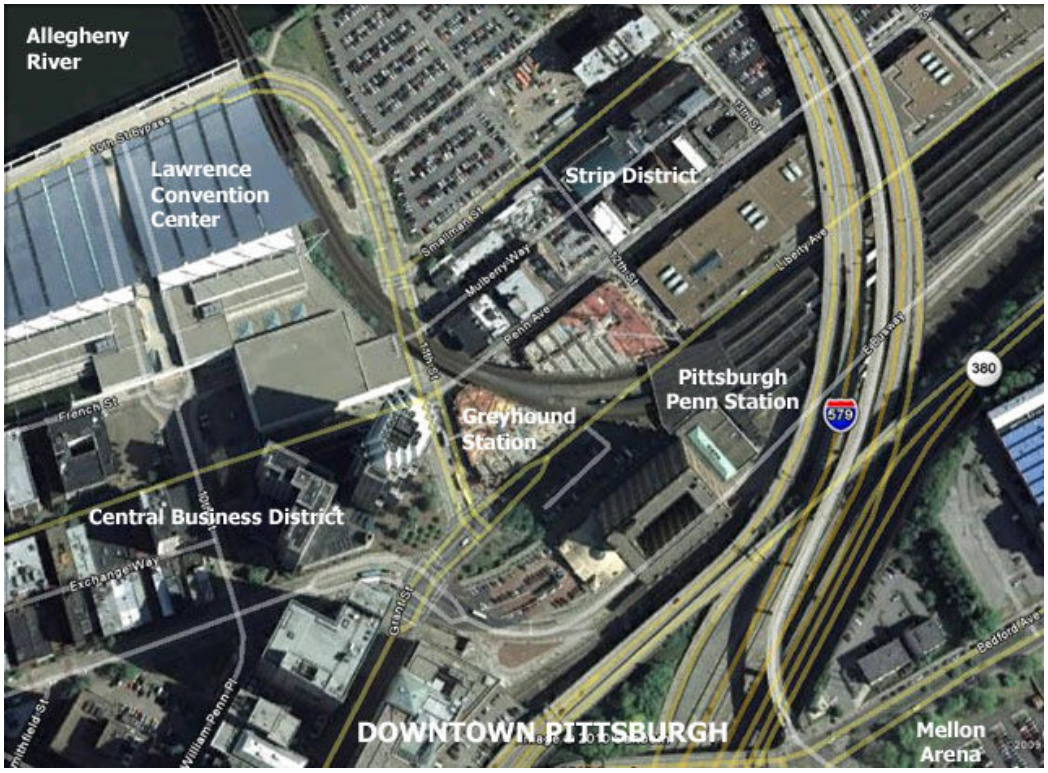


Proposed North Coast Transportation Center in Downtown Cleveland, part of an enclosed and open-air pedestrian linkage between the rebuilt Convention Center-Medical Mart and the tourist attractions at North Coast Harbor. Existing rail corridors are well positioned so passenger trains can effectively serve traditional, contemporary and emerging Tech Belt assets.



A station-area development concept proposed for Downtown Youngstown by All Aboard Ohio. The proposal would convert underutilized riverfront industrial land into a transportation center surrounded by mixed-uses to capitalize on the proximity of downtown technology offices, civic institutions, the Covelli Center and Youngstown State University.

Above, Hudson's neo-traditional First & Main mixed-use development of offices, shops and housing is sandwiched between downtown Hudson, the CYP rail corridor and the historic Hudson train depot. Similar developments built at other CYP stations would enable the passenger rail service to maximize its synergies and leverage the strengths of Tech Belt assets.



Pittsburgh's Amtrak train station (Penn Station) is within walking distance of many of the city's most important destinations. It is also served by the downtown light-rail subway to Station Square, Gateway Center and Northshore as well as the East Busway to Oakland, Shadyside, East Liberty, Wilkinsburg, Edgewood, Swissvale and Rankin.

Youth popularity

Next Generation Consulting of Columbus, which tracks trends involving college students, young professionals and "brain drain" issues notes that young adults consider the availability of quality public transportation services when making choices about where to go to school and to work. Passenger railroad and light-rail transit services are considered by many young adults as the highest quality public transportation services available.

The popularity of trains among college students and young professionals is evident in this scene at Davis, Calif., home to a branch of the University of California. There are 15 large colleges and more than 150,000 students within 10 miles of the CYP Tech Belt rail corridor.

Interestingly, Next Generation also notes that young professionals tend to put a higher priority on the quality of life in the community where they will live than on the actual job they will work. They prefer communities that offer lifestyle choices that don't require every trip, be it across town or across the state, to be made by car.

Amtrak notes that colleges are one of its largest traffic generators nationwide. In addition to offering its Student Advantage discount card – good for a 15 percent discount for students riding the train – Amtrak has also joined with Collegia Inc. a Massachusetts firm that seeks to unite colleges and communities. Amtrak has partnered with Collegia to make a "Buy one; get one 50% off" Campus Visit discount to help high school juniors and seniors to visit their top college choices.

But a big reason why trains are so popular is because trains are often more affordable than buses, offer more seating space and comfort, have café/lounge cars for socializing, and young people can bring their bicycles on board most trains. Newer trains have on-board bike racks while other trains let passengers stash their bicycle in the baggage car.

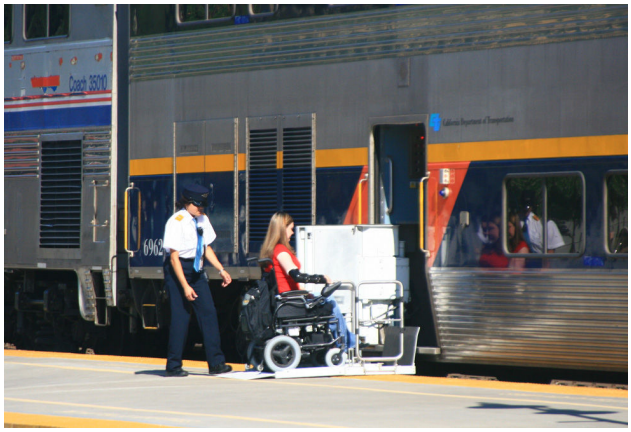
Many of Amtrak's most heavily used routes link colleges and universities, such as the Charlotte-Raleigh "Piedmont" corridor where trains on Fridays and Sundays are dubbed by train crews as "Laundry Runs" because so many college students ride and bring large bags of clothing home with them so they can be washed. Other busy college corridors are Chicago – Detroit which sees many University of Michigan students boarding at Ann Arbor, Chicago – St. Louis which Illinois State University students board at Bloomington-Normal, or Chicago-Carbondale which students at the University of Illinois use frequently.

Within 10 miles of the Cleveland – Youngstown – Pittsburgh rail corridor are 15 colleges and universities each with more than 5,000 students. At those schools and dozens more at smaller colleges, technical schools and other institutions of higher there are about

150,000 students in total in the CYP Tech Belt. It's another reason why this corridor is fertile ground for passenger rail.

Accessibility

Currently, 94 percent of Amtrak passengers board at ADA-accessible stations and in 2009 and 2010 the railroad is making $40 million in additional accessibility improvements at numerous locations across its 529-station network. These improvements, part of Amtrak's Mobility First program, include the installation of wheelchair lifts, construction of tactile edges on trackside platforms and provision of handicapped spaces at obstruction-free parking lots for vans and other vehicles.



A train attendant uses a station-based wheelchair lift to load a disabled passenger aboard a train. By 2011, all trains and stations nationwide should be in compliance with the Americans with Disabilities Act. Barrier-free access to trains is big advantage.

Because of the large size of trains, wheelchairs are able to easily maneuver inside them including in the bathrooms. Amtrak has removed a pair of side-by-side seats near the end of each rail car so a wheelchair can be secured there. In many instances the wheelchair spot is near a window.

The expansion of passenger rail service between Cleveland – Youngstown – Pittsburgh would reverse a decades-long decline in intercity public transportation in this populous corridor. Prior to Amtrak's creation in 1971, privately run passenger trains on privately owned tracks was in a long decline, unable to compete with publicly owned road infrastructure. Then, intercity buses (Greyhound, Trailways and smaller carriers) went into a long decline.

In the CYP Tech Belt … about 700,000 driving-age citizens do not drive due to age, income, disability or preference, according to the U.S. Census.

Greyhound has virtually abandoned the short-haul travel market nationwide and the CYP Tech Belt is no different. There are only three daytime buses each way between Cleveland and Pittsburgh, all of which travel via Akron and take about 3½ hours to cover the entire distance. Cleveland, Akron, Youngstown, New Castle and Pittsburgh are the only stations left in the CYP corridor. Stations in Maple Heights, Kent, Hiram, Warren, Sharon, Beaver Falls, North Hills and others were closed. Service to college towns like Kent and Hiram was abandoned. It forced communities to turn to local transit services like the Portage Area Regional Transit Authority to provide transportation, albeit limited, to the outside world. New Castle has no direct bus service to Youngstown or Cleveland.

These are troubling developments for ensuring travel accessibility **in the CYP Tech Belt, where about 700,000 driving-age citizens do not drive due to age, income, disability or preference, according to the U.S. Census.** As noted earlier, the largest numbers of no-car households are in the cities – 29 percent of households in Pittsburgh have no car, 25 percent in Cleveland and 18 percent in Youngstown. Their isolation means that so many people who could otherwise contribute to the economy are left to burden the economy by having to rely on costly social services. Providing intercity passenger rail – in addition to serving business travelers, commuters, college students, tourists and sports fans will also provide essential transportation to healthcare, education and jobs to many who lack cars.

Policies and planning

High-speed rail is the ultimate goal – federal policy encourages that it be pursued incrementally, starting with improved passenger service on enhanced freight corridors.

This approach ensures usable service comes to the CYP Tech Belt much more quickly, thereby building demand for high-speed rail once it comes. It is also a cost-effective path to rail service that people in the four metro areas will use.

This is the federal policy following the passage of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) – the first-ever passenger rail capital improvement strategy established by the federal government. While that sets the policy framework, subsequent federal appropriations established the actual funding amounts which are administered by the Federal Railroad Administration (FRA). Railroads, plus local and state governments may apply to FRA for funding as long as projects fit into state and federal system plans. While those plans are being finalized at this writing, they will likely be refined and adjusted over time.

Although a generalized Cleveland - Pittsburgh Corridor is identified in Ohio's and Pennsylvania's statewide rail plans, a specific routing is not. That will be determined over the next two years by the Ohio Hub Programmatic Environmental Impact Study which will establish planning objectives for this and other corridors. The planning objectives will:

- bridge the short-term/long-term planning analysis of corridor requirements;
- oversee and coordinate start-up service while advancing the conceptual engineering and analysis of alternative routes, station sites and facilities; and
- recommend a long-term corridor development strategy.

The PEIS is the first step in the planning process in order for any systematic transportation project to become eligible for federal funds. With public input, the PEIS will identify potential infrastructure improvements, environmental planning and a service development plan for fast, reliable passenger rail services ranging from 79 to 110 mph. A cost/benefit analysis will also be performed and serve as the basis for a potential cooperative agreement among the states and local officials in identifying funding for the improvements.

Additionally, the PEIS will look at an interim service of 2-3 daily round trips on active railroad rights of way that can be operated reliably while benefiting freight services, too. A starter service can often be implemented within several years. But a more fully developed service with higher speeds and more frequent departures require additional planning and environmental assessment which averages a decade before service can begin.

Under the National Environmental Policy Act, these are typically the five federally required planning steps and the time required before passenger service can begin operations on a rail corridor that requires significant land use changes (ie: property acquisitions) and/or impacts on adjacent land uses (such as increased noise, vibration, etc. from much faster and/or more frequent train services).

These are the federal transportation project planning steps and a minimum duration for each:

Step 1 – Program level, first-tier PEIS, two years;
Step 2 – Project level, second-tier EIS, one year;
Step 3 – Preliminary engineering, one year;
Step 4 – Final design, one year;
Step 5 – Construction, two years.

This doesn't account for the time needed between each step to round up funding for the next phase of planning or to conduct negotiations over contracts and properties. That funding can be significant – perhaps one-third of the transportation project's total estimated construction cost. As we know from recent road and rail improvements, corridor-wide projects can tally in the hundreds of millions, if not billions of dollars. So the planning portion alone can amount to tens of millions, if not hundreds of millions of dollars.

All transportation projects in need of federal dollars must go through this lengthy, costly but transparent process to screen out projects less deserving of federal support. This also provides due process to protect property owners, historical/cultural sites and natural habitats from potential harm. Those are among the goals of the National Environmental Policy Act.

Ohio Hub System plan findings

From 2003-2007, the Ohio Hub System feasibility plan has determined that 79-110 mph passenger rail services in the region would generate substantial ridership and economic benefits. The Ohio Rail Development Commission is the state agency responsible for carrying out this planning, plus coordinating funding and incentives to implement the plan.

Below are some estimated findings from the Ohio Hub planning work:

Full build-out service level of 8 daily round trips at 110 mph
Capital investment: $700 million
Annual ridership: 663,000
Permanent jobs created: 16,800
5-year economic impact: $ 1.6 billion

Start-up service level of 2-3 daily round trips at 79 mph
Capital investment: $30 million
Annual ridership: 220,000
Permanent jobs created: 720
5-year economic impact: $70 million

Sources – Ohio Hub Economic Impact Analysis; All Aboard Ohio; U.S. Department of Commerce.

Additional predicted benefits from the Ohio Hub study show that Youngstown's train station would see 78,000 yearly riders at full build-out, $50 million to $70 million in downtown development with up to 400 jobs created. Plus there would an increase in annual household income of more than $20 million, just in Youngstown.

Furthermore, the impacts on some of the existing transportation assets in the region were measured by the Ohio Hub study. One example was Cleveland Hopkins International Airport which has a parking garage within 500 feet of an Ohio Hub rail corridor. Hopkins is projected to see a 5 percent increase in traffic and a $0.5 billion to $1 billion economic benefit from it being served by passenger trains to other cities, including those in the Cleveland – Youngstown – Pittsburgh corridor.

Implementation

Grassroots interest is growing for developing passenger rail service in the CYP Tech Belt That interest gained significant momentum with many leaders stepping forward to advance the initiative at the 2010 Regional Learning Network conference held in May 2010 in Youngstown. Attending were more than 250 community, government and business leaders from Cleveland, Youngstown and Pittsburgh.

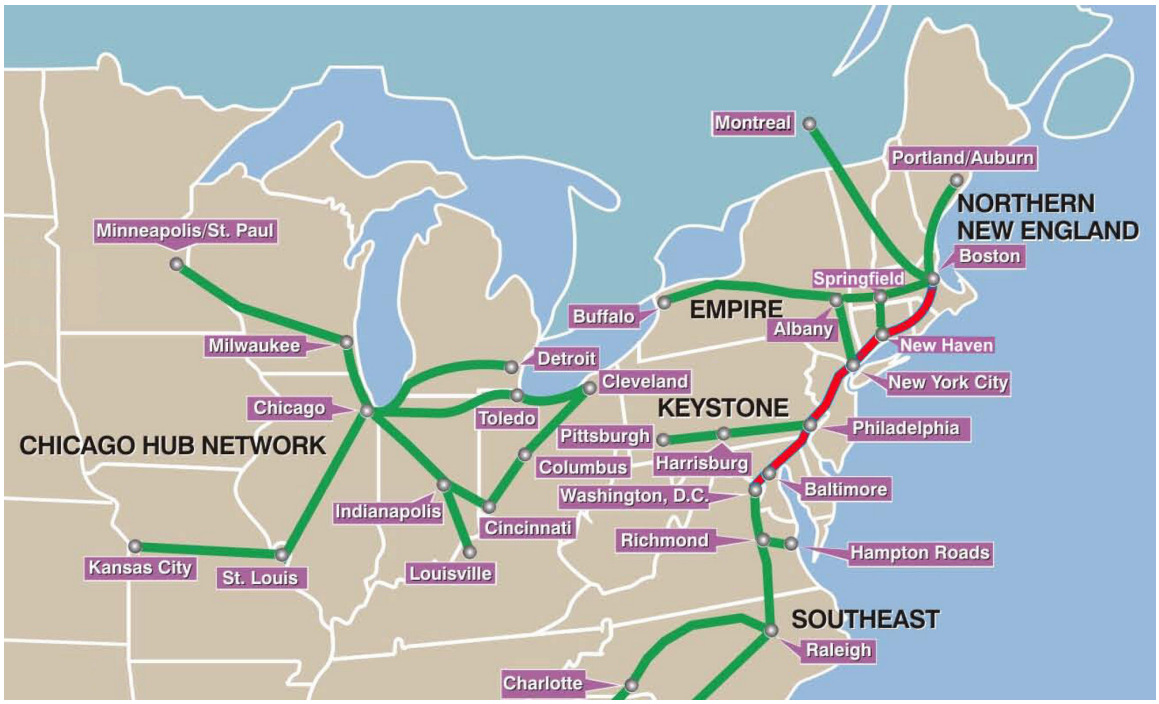
The outcome of the meeting was an action plan that advances regional rail, brings service to the CYP corridor and establishes a regional entity to oversee the initiative. High-speed rail is the ultimate goal but will be pursued incrementally, starting with improved passenger service on enhanced freight corridors. This approach ensures usable service comes to the region much more quickly, thereby building demand for high-speed rail once it comes. It is also a cost-effective path to implement rail service that people in the CYP Corridor's four metro areas will use.

Specifics of the plan advanced as a result of the 2010 Regional Learning Network conference are:

• Restoration of the 1-mile Ravenna Connection, thereby connecting Youngstown to Cleveland and Pittsburgh – vital to improving ridership and advancing regional rail as an economic catalyst.

• Advocating for interim funding to put more trains on-line, vastly improving passenger rail service and adequately linking the region to Chicago and the Northeast. This plan benefits both passenger and freight customers. Currently, only one late-night train covers the region.

• Ensuring that the Federal Railroad Administration fills the "Gap in the Map" of the planned high-speed rail network by granting the CYP corridor high-speed designation (see map below).



The Youngstown/Warren Regional Chamber Board of Directors voted earlier this year to support efforts to bring rail passenger service to the CYP corridor. U.S. Reps. Tim Ryan of Niles (D-17) and Jason Altmire of McCandless, PA (D-4) are seeking to designate the Cleveland-to-Pittsburgh corridor as a high-speed rail passenger corridor as part of their

Cleveland-to-Pittsburgh Tech Belt Initiative. The Ohio Rail Development Commission (ORDC) has since included the corridor in its Statewide Rail Plan which is required for current or proposed passenger rail routes to receive federal funding.

Ravenna Connection track

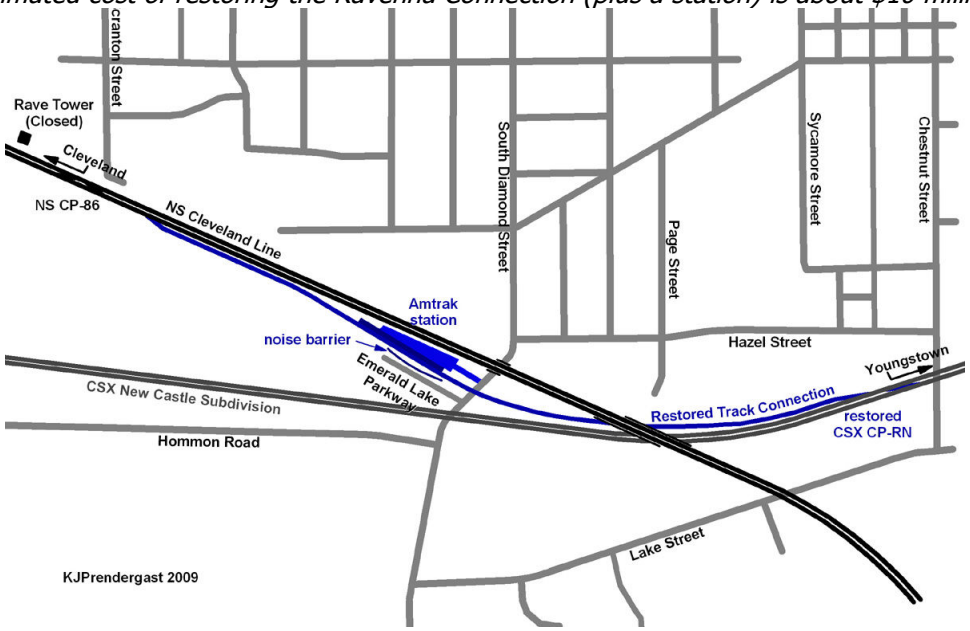
As noted, an essential project is the restoration of the 1-mile Ravenna Connection track. It will link Norfolk Southern's 79 mph Cleveland Line from downtown Cleveland to CSX Transportation's 79 mph New Castle Subdivision to Youngstown and New Castle. The length of the connection is necessary due to a roughly 25-foot gradient change (see map). **Without the Ravenna Connection track restored it is physically impossible for any trains, be they passenger or freight, to travel directly between Cleveland and Youngstown.**

Without the Ravenna Connection track restored, it is physically impossible for any trains, passenger or freight, to travel directly between Cleveland and Youngstown.

At New Castle, trains would use a track connection Amtrak built in 1994 to reach another Norfolk Southern rail line to downtown Pittsburgh. Even though Amtrak stopped using the New Castle Connection in 2005, it remains in good condition and is in service as a freight connection.

A train station could be built on the Ravenna Connection track so that stopped passenger trains won't block frequent NS and CSX freight trains. Quiet zone enhancements and sound walls or natural screening would be added to protect nearby property owners.

Estimated cost of restoring the Ravenna Connection (plus a station) is about $10 million.

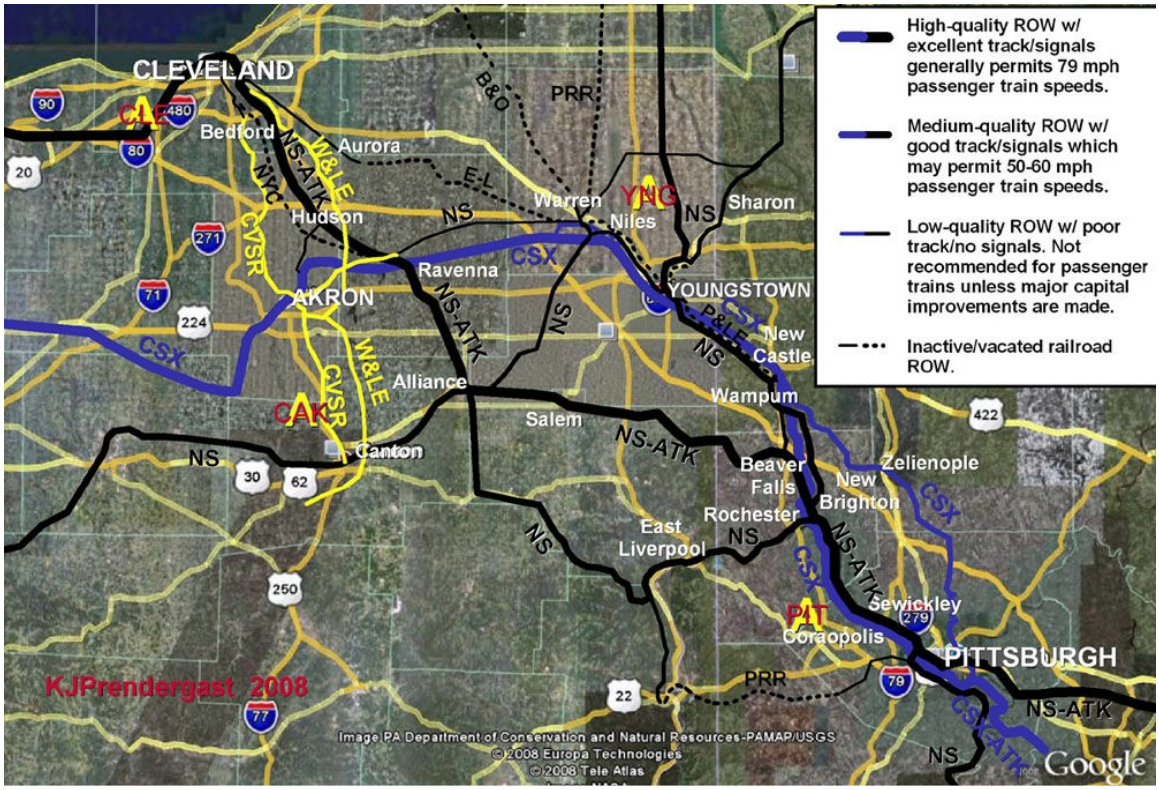


Proposed restoration of the Ravenna Connection track

Benefits of restoring the Ravenna Connection track:

- **It will link two high-quality mainline railroads and restore direct freight and passenger rail access between Cleveland and the Mahoning Valley for the first time in more than 25 years.**
- **The site is an accessible location for a Portage County station which would also serve nearby Kent State University and Greater Akron via direct bus transit connections.**
- **The chances of Ravenna gaining a train station stop are increased greatly if passenger trains can stop on the connecting track where they won't block frequent freight train traffic.**
- **Even if future, high-speed Ohio Hub passenger rail services operate on a different route, the Ravenna Connection could continue serve as a back-up passenger route as well as an important freight link between Northeast Ohio industries.**

Also, Youngstown's B&O Station west of downtown could be reactivated as part of a low-cost, basic start-up. Existing Amtrak service from New York City, Philadelphia and Harrisburg ending in Pittsburgh could be extended west to New Castle, Youngstown, Ravenna and Cleveland without having to alter the existing route of Amtrak's daily Capitol Limited via Alliance.



Conclusion

The suggested action plan which grew out of the CYP Regional Learning Network meeting in May 2010 is a good place to start. That plan advances regional rail, brings service to the CYP corridor and establishes a regional entity to oversee the initiative. But there is an even more immediate goal: to ensure sufficient funding exists to conduct the entire $14 million Ohio Hub System Programmatic Environmental Impact Study. About $6 million remains unfunded. The Cleveland-Pittsburgh corridor is included in the PEIS, which is the first step in the planning process in order for any systematic transportation project to become eligible for federal funds.

Without a fully funded PEIS, there will not be sufficient planning documentation available for the region to submit for funding for an introductory passenger rail service in the CYP Tech Belt. CYP interests need to rally behind their elected officials to secure the funding, which would be awarded to the PEIS sponsor: the Ohio Department of Transportation's Ohio Rail Development Commission.

This funding would avail environmental documentation, engineering and, ultimately, restoration of the Ravenna CSX-NS interchange track to revive direct rail freight and passenger service between Cleveland and Youngstown. It would also result in the blueprints for ADA-compliant stations in Cleveland, Ravenna, Youngstown and New Castle. Local, state and federal officials need a commitment from Amtrak that it will use the CYP route for expanded services between Cleveland and Pittsburgh.

Thus, these appear to be the immediate priorities in a probable order of progression:

1. Establish a regional entity to oversee the CYP Tech Belt Tracks grassroots initiative.
2. $6 million to round out the funding for the Ohio Hub PEIS and develop environmental, engineering documentation for short-term CYP rail service and a system plan for long-term service expansion and improvement.
3 "Fix the Gap in the Map" via a federal high-speed rail designation for the CYP Corridor.
4. Amtrak commits to operate new Cleveland-Pittsburgh services via Youngstown.
5. $10 million to restore Ravenna Connection track.
6. $20 million for ADA-compliant stations in Cleveland, Ravenna, Youngstown, New Castle and with more stations added later.

At the conclusion of step six, the CYP Tech Belt rail corridor will have been created and will offer a starting point for additional growth to be identified by completing the 10-year federal planning process. That process will result in final engineering, funding agreements and public-private partnerships for the provision of fast, frequent passenger rail services that truly shrink the cost and distance barriers between Cleveland – Youngstown – Pittsburgh, just as its congressional champions envision.

KJP
All Aboard Ohio
June 2010