

## From Boxcars to Buses: Use of Railroad Rights-of-Way for Transit in Pittsburgh

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## Pittsburgh's Railroads



Historical Society of Western Pennsylvania

Pennsylvania Railroad entered Pittsburgh in 1852. Became the largest railroad serving Pittsburgh

Other major railroads serving Pittsburgh:

- Baltimore & Ohio
- Pittsburgh & Lake Erie
- Pittsburgh & West Virginia/Wabash Pittsburgh Terminal (Last railroad to enter Pittsburgh)

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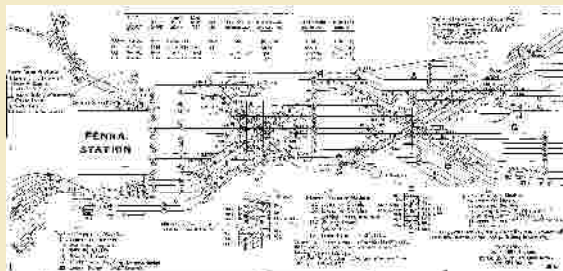
## Extensive network of railroad lines developed in Pittsburgh by the 1900s



Portion of Pittsburgh & Lake Erie RR Map  
Railsandtrails.com

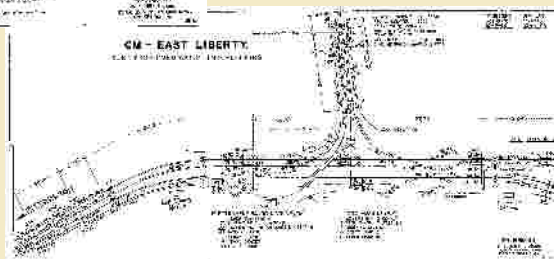


## Railroads' Vast Physical Plant



Pennsylvania Station  
Track Layout

CM Interlocking  
in East Liberty



[Broadway.pennsyr.com/Rail/Prr/](http://Broadway.pennsyr.com/Rail/Prr/)



## PRR's rail infrastructure in Pittsburgh

- To accommodate increased freight and passenger traffic busiest lines were widened to four tracks
- These lines were also grade separated in elevated and depressed alignments
- Wide rights-of-way and grade separation subsequently facilitated use of PRR rail corridors for transit usage



Both images: University of Pittsburgh

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Howard Fogg, Author's collection

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## Mid 20<sup>th</sup> Century Changes in the Pittsburgh Region and Rail Corridors

- Pittsburgh region became economically mature in the 1920s
- Lineside industries relocate to other areas or go out of business (Ford Motor plant ceases production in 1932)
- City of Pittsburgh reaches its peak population in 1950 and then enters a long period of population decline
- Many residents of Pittsburgh neighborhoods and adjacent municipalities move to new suburbs such as Monroeville and Greentree
- Businesses follow the outward migration
- Suburban retail developments attract shoppers away from traditional business districts
- Disinvestment in communities located along rail corridors
- First “Renaissance” for Downtown Pittsburgh occurs in 1950s

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## Later 20<sup>th</sup> Century Changes in Pittsburgh

- Unsuccessful effort to revitalize East Liberty through clearance of many properties, creation of pedestrian mall and development of a ring road around the neighborhood’s core
- The Pittsburgh region undergoes a sharp decline in steel making and other heavy industrial production in the late 1970s and throughout the 1980s
- City’s population declined by 37% 1950 – 1980
- The educational and medical sectors emerge as the major drivers of the Pittsburgh region’s economy
- Downtown Pittsburgh undergoes second “Renaissance” (1980s)

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## Post-war Decline of Railroads

- 1947 - PRR posts loss
- Travelers shift to driving and flying
- Long-distance passenger rail service greatly reduced
- 1964 - PRR eliminates all Pittsburgh area commuter rail service
- With regional industrial decline and more freight being shipped by truck, demand for freight rail decreases
- 1968 - PRR merges with New York Central to form Penn Central
- 1970 - Penn Central enters largest bankruptcy in US history
- 1971 - Amtrak created
- 1976 - Conrail formed



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## New opportunities for Port Authority Utilization of Rail Corridors

- Wabash HOV: Wabash Tunnel
- South Busway: Edge of Norfolk & Western Railway Corridor
- West Busway: Abandoned section of Conrail Panhandle Line in Western communities
- South Hills Light Rail System: Tunnel and bridge sections of Conrail Panhandle Line in Downtown Pittsburgh
- Martin Luther King, Jr. East Busway: Conrail/Norfolk Southern Pittsburgh Line corridor and along short section of a Baltimore & Ohio RR corridor

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## Port Authority Facilities using Railroad Corridors



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## Light Rail Transit System



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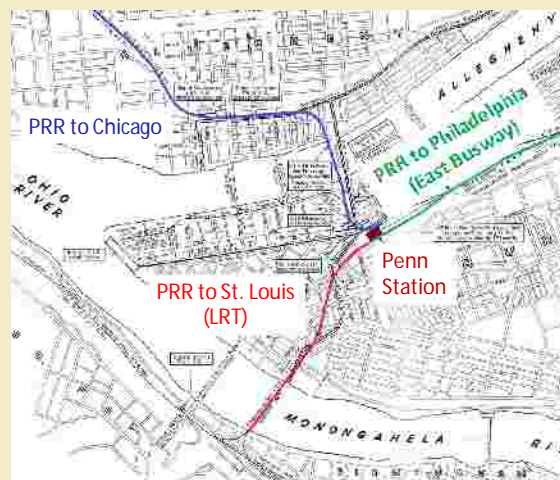
## Light Rail Transit System

- 26.2 miles of line linking the North Shore & Downtown Pittsburgh with South Side and South Hills
- Red Line opened in 1987
- Blue Line opened in 2004
- North Shore Connector opened in 2012
- Mix of subway, elevated, on street and at-grade private right-of-way alignments
- 27,500 weekday riders (2014)



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## Railroad right-of-way available for LRT Alignment



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## Reuse of Railroad Facilities for LRT

- Port Authority bought right-of-way from Conrail in 1980
- Purchase included:
  - Grant's Hill Tunnel (Used for Steel Plaza Station)
  - ROW on both sides of tunnel
  - Panhandle Bridge
- No longer used for passenger service and other railroad infrastructure accommodated rerouted freight trains



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## First Avenue Station

- Built adjacent to elevated PRR alignment and on site of street-level B & O freight and passenger rail terminal
- Opened in 2001
- Intermodal function with connections to parking and Eliza Furnace Trail



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## Development along LRT Line

- Steel Plaza Station
  - BNY Mellon Center (incorporates Steel Plaza Station)
  - Walkway connection to US Steel Building (now UPMC) has several small businesses and YMCA
  - Mellon Customer Service Center
- First Avenue Station
  - PNC Firstside Center
  - Public Safety Complex
  - Parking Garage
  - Bicycle Rental



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## Martin Luther King, Jr. East Busway



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## Martin Luther King, Jr. East Busway

- 9.1 miles linking Downtown Pittsburgh and Oakland with East End neighborhoods and Eastern suburbs
- 24,000 weekday riders (May 2014)
- Built from Downtown to Wilkinsburg in 1983 and extended to Swissvale in 2003



## Busway built in property made available when railroad consolidated operations on two tracks

South Highland Ave Bridge over Railroad and East Busway  
Shadyside & East Liberty



University of Pittsburgh

## Relationship of Busway to Railroad



Shadyside



Swissvale

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## Conrail and Norfolk Southern Requirements

- Track and Signal Improvements
- Realignment of track
- Railroad clearance requirements
  - 13 feet from centerline on tangent track
  - 14 feet on curved track
- Insurance
  - \$100 Million of liability per occurrence per year
  - High level of transit service is considered to be high frequency of risk
  - Covers operations within 50 feet of the railroad
  - Additional \$10 million policy covers contractors and subcontractors performing work on busway and stations

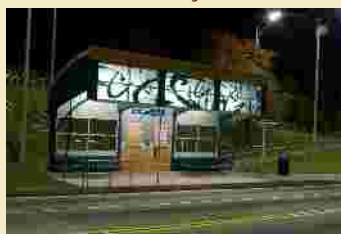
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## East Busway Benefits

- Major reduction in travel times for eastern commuters
- Investment represented a major improvement in a deteriorated railroad corridor:
  - New transit guideway
  - New stations
  - Lighting and landscaping
- The combination of improved access and the physical investment generated developer interest in Pittsburgh's eastern neighborhoods



East Liberty Station



Herron Station



## Development along the Busway

- Population decline leveling off (-15% 1990 – 2010 compared to -17% for City)
- \$800 million between 1983 and 2008
- Additional development taking place
- Development includes new construction and renovation of older buildings
- Popularity of East End neighborhoods with students and young professionals
- Expansion of medical sector



## New Construction



Shadyside: Medical Professional Building



Homewood: Townhouses



Shadyside: Condominiums



East Liberty: Mixed Retail



## Reuse of Lineside Industrial Buildings



Nabisco Plant  
Allegheny Conference on  
Community Development



Ford Motor Company Plant  
Don Dougherty Collection



Bakery Square



UPMC Research Facility



## East Liberty Redevelopment

- New development reestablished East Liberty's status as a key activity center in Pittsburgh
- Several community redevelopment plans for the neighborhood core focused on the busway station.
- Greatest amount of development along busway
- TIGER grant to build new station and infrastructure to support new Transit-Oriented Development



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## Penn Station Transformation



Railpictures.net, John Dziobko



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## Railroad continues to be an important transportation artery

- Amtrak opens new station facility in 1990
- Two Amtrak trains in each direction
- Conrail merges into Norfolk Southern (NS) in 1999
- Nearly all freight trains are through trains not serving Pittsburgh industries



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## Rail Corridor Opportunities

- Railroad corridors are often wide enough for new rail or bus rapid transit lines
- Can reduce right-of-way acquisition costs
- Railroads often have done the difficult work of overcoming geographic barriers by constructing tunnels, bridges, etc.
- Railroad yards can provide locations for bus garages, railcar maintenance and storage areas, stations and park-and-ride lots
- Maintaining transportation function of the corridor can avoid the need to rezone the corridor to permit a transit facility



West Busway Berry Street Tunnel

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## Rail Corridor Challenges

- To minimize grade changes, railroads are located within valleys or on elevated alignments which are not easily accessible
- Abandoned railroads, yards and other rail facility sites are often hazardous material site locations
- Coordination with railroad can be complex and costly
  - Require funding of improvements to railroad infrastructure in return for allowing shared use of an active railroad corridor
  - Costly insurance premiums
- Use of grade-separated rights-of-way cause many to view East Busway infrastructure as a barrier to access between communities
- Presence of an active railroad increases complexity of implementing Transit-Oriented Development

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