Commuter-Style Interurban Railways and Modern Regional Transit: Rise, Fall, and Reuse

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Commuter-Style Interurban Railways and Modern Regional Transit:  
Rise, Fall, and Reuse

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Abstract: The electric interurban railway was a fast, heavy-duty adaptation of street railway technology for suburban, rural, and intercity travel. Achieving its greatest prosperity in the early 20th century, it almost died out by the early 1960s. Some of the longer-lasting interurbans, particularly in Chicago, Ill. and Los Angeles, Calif., were largely comparable in their rights-of-way and rolling stock with conventional electrified commuter railroads. Despite considerable differences, these commuter-carrying interurbans shared an overall history of growth, consolidation, decline, and abandonment.

One of these, the Norristown High-Speed Line in suburban Philadelphia, Penna., continues as a suburban rapid transit line. A second, the South Shore Line in northern Indiana, survives as an electrified commuter railroad. Portions of several others have been reused for rapid transit or light rail. Even though these interurbans were largely business failures, the revival of many segments suggests that their underlying transportation bases were sound.
The electric interurban railway was a short-lived transportation technology, achieving prominence in the 1900s and largely abandoned by the late 1930s. The interurban formed a continuum from suburban operations of city systems to heavy electric railways that interchanged freight with steam railroads. [Interurbans] shared most or all of the four following characteristics: electric power, primary emphasis on passenger service, equipment that was faster and heavier than city streetcars, and operation on streets in cities but at the sides of highways or on private rights-of-way in rural areas (I).

The interurban flowered spectacularly but briefly, especially in Ohio, Indiana, Illinois, and California (2). A few, however, survived beyond World War II, aided by high-quality alignments and service to major cities.

INTERURBAN HISTORY
The electric interurban railway and its successors have passed through several phases since the industry emerged in the early 20th century:
• First, interurbans started in the 1900s and 1910s linking cities, towns, and rural areas. The rise of the automobile and the paved highway rendered most of these lines uneconomical by the 1930s (and sometimes earlier). These lines often featured wooden cars and marginal physical plants.
• Second, with the demise of the rural and small-town interurban, the surviving properties mainly served metropolitan commuting markets. Several had substantial physical plants and were able to finance major improvements until the early 1930s.
• Third, the effects of the Great Depression caused most interurbans not serving large cities to be abandoned during the 1930s.
• Fourth, even those interurbans that survived into the post-World War II era found it increasingly difficult to survive as the automobile became the preferred form of transportation in newly-developed suburbs.
• Fifth, the interurban almost completely disappeared by the early 1960s, shortly before public support became available for transit.
• Finally, the very few surviving lines have been rehabilitated, and parts of the alignments of several abandoned interurbans have been incorporated into modern rail transit systems. These surviving and revived operations have benefited from public support.

COMMUTER-STYLE INTERURBANS
Despite the early demise of many interurbans, those “that operated high-speed intercity service frequently handled heavy commuter service … A combination of the two represented a vital advantage that enabled many carriers to outlive the majority of the interurban industry” (3).

Most interurbans, even the most distinguished, had narrow clearances and/or sharp curves. They commonly ran on city streets, co-mingled with streetcars or rapid transit, and accommodated freight trains. Nevertheless, some also had well-engineered main lines built to railroad standards, and their schedules served commuters. These
properties, which may be called commuter-style interurbans, differed from main line railroad commuter services in their history and more varied rights-of-way and downtown access, but developed similar market functions.

Table 1 shows typical features of street cars, rapid transit, modern light rail, traditional interurbans, commuter-style interurbans, and modern commuter rail. Interurbans were included if their downtown access included short street-running segments, but not if street running formed the primary downtown access (e.g., Cleveland, Ohio’s Lake Shore Electric, the Detroit United Railway in southeastern Michigan, and British Columbia Electric in Vancouver, Canada).

Eight interurbans exemplifying higher standards were analyzed further. A few others shared some of the physical qualities and historical experiences of these lines, but these eight were selected to show the variety of outcomes for interurbans with superior rights-of-way:

- Philadelphia & Western
- Chicago, North Shore & Milwaukee (Chicago, Ill. end only)
- Chicago, Aurora & Elgin
- Chicago, South Shore & South Bend
- Milwaukee Electric Railway & Light (West Side Rapid Transit only)
- Illinois Terminal (local service from St. Louis, Mo. to Alton, Ill.)
- Pacific Electric (Northern and Southern Divisions)
- Sacramento Northern (San Francisco, Calif. area only)

Table 2 shows the principal characteristics of these operations. Table 3 shows service levels for these lines (and their modern successors, if any). The case studies are now considered – for abandoned interurbans, surviving lines, and finally for interurbans where some rail transit service was restored after abandonment.

**ABANDONED INTERURBANS**

Most interurbans (including some commuter-style properties) were abandoned, leaving no subsequent rail service.

**Chicago, Aurora & Elgin**

The Aurora, Elgin & Chicago (AE&C) opened in 1902 serving Chicago’s west suburbs with a connection to the Garfield Park elevated (or ‘L,’ as it is known in Chicago) and began through running on the ‘L’ to downtown Chicago when Wells St. Terminal was built in 1905 (4). The closely-interrelated operations of AE&C and its rapid transit landlord required disciplined timekeeping by both carriers (5).

Aside from street running at the outer ends, AE&C was built to railroad standards. There was double track to Wheaton, where single-track branches to Aurora and Elgin, Ill. diverged (further branches diverged from these to Batavia and St. Charles, Ill.) The frequent stations along the main trunk required fast running to compete with the Chicago & North Western (C&NW) and other steam railroads.
The economic strains of World War I drove AE&C into bankruptcy in 1919. In 1922 a group led by Dr. Thomas Conway bought AE&C, which now became the Chicago, Aurora & Elgin (CA&E). Conway’s group invested heavily in new steel cars and other improvements. In 1926, Chicago electric utility magnate Samuel Insull bought CA&E, and continued its high standards. Until the Depression, Insull planned a fast bypass line for Chicago-Aurora trains. An initial segment was built to Westchester, Ill., and was used by rapid transit trains until its abandonment in 1951. The marginal St. Charles branch was abandoned in 1937. In 1939 CA&E built a new terminal on the edge of downtown Aurora, Ill., eliminating the last remaining street running.

Emerging from bankruptcy on the strength of wartime traffic and looking forward to sustained ridership as its catchment area became increasingly suburbanized, CA&E received ten new cars in 1946. But highway planners selected the Garfield Park ‘L’, which CA&E used to reach Chicago, as the path for a new expressway. In 1953, CA&E service was truncated at the outer end of the ‘L’ when expressway construction forced trains onto a slow, temporary street-level alignment for 1-½ mi. Capacity on this segment was adequate for the ‘L,’ but not for CA&E as well, which had its own concerns about this substandard right-of-way.

The inconvenience of the transfer and the slow speed of the connection led many riders to find alternate transportation, even though the combined fares were less than the previous through fare to downtown (6, p. 36). Ridership fell from 6 million in 1952 to only 3.5 million in 1955. CA&E operated fewer and shorter trains, and petitioned to discontinue passenger service in 1955.

As soon as regulatory permission to end interurban operations was granted on July 3, 1957, CA&E terminated service during the mid-day, and riders had to find other transportation home. The 1958 opening of the Congress rapid transit line in the expressway (part of today’s Blue Line) to replace the partly-dismantled elevated came too late to help CA&E.

In 1956, at the request of the Illinois governor’s office, the Chicago Transit Authority (CTA) drew up plans for the possible restoration of Chicago-Wheaton through service, and alternatively for conversion into a light rail line connecting with the ‘L’ using surplus Chicago streetcars (7). But suburban officials were not prepared to subsidize service or purchase and rehabilitate CA&E.

A 1960 referendum in suburban DuPage County to revive CA&E service failed narrowly, opposed by competitor Chicago & North Western. In 1961, CTA proposed restoring CA&E service, to be funded with a gasoline tax. But Illinois lawmakers rejected the idea, and the interurban, now freight-only, was officially abandoned that year.

The Union Pacific (ex-Chicago & North Western) West Line (part of Metra, northeastern Illinois’ commuter railroad) runs within 1 mi or less of CA&E’s main line between Chicago’s near western suburbs and Wheaton. Much of CA&E’s right-of-way is now a trail for hikers and cyclists.
**Milwaukee Electric**

The Milwaukee Electric Railway & Light (TM) operated Milwaukee’s streetcar system and interurban lines radiating in all directions, but travel times to and from the city were slow because TM’s interurbans reached downtown on city streets. To speed service, TM built the Rapid Transit, a trunk line on the city’s West Side engineered to railroad-like standards. The Rapid Transit allowed interurbans serving points to the west and southwest to bypass city streets. The line was opened in stages between 1926 and 1930, and TM was able to save 23 mins in scheduled running time versus the former all-street routing.

The Rapid Transit stopped 0.6 mi short of downtown, with street running to TM’s downtown terminal. TM started work on a short subway which would have linked the Rapid Transit with the terminal, but the Depression halted that effort. Despite the street running, interurbans made the 5.6-mi run from the terminal to 84th St. on Milwaukee’s West Side (the edge of the built-up area in 1930) in 13 mins, averaging 25.9 mph. This is similar to speeds on faster light rail and rapid transit runs today, and on some local commuter rail services.

After World War II, TM quickly converted its city streetcar and interurban lines to buses. In 1949, it sold the Rapid Transit, which was by then without rail feeder lines. New investors ran it as a stand-alone operation called Speedrail, using fast, lightweight, second-hand streetcars. Following two fatal collisions, Speedrail ended service in 1951, and the line was abandoned. Today, Interstate 94 to the west of downtown Milwaukee has been built on the inner part of the Rapid Transit alignment. Interstates 94 and 494 to the west and southwest of downtown run adjacent to (although not directly on) most of the rest of the Rapid Transit (9).

**Illinois Terminal**

In the early 20th century, electric utility and traction baron William B. McKinley developed Illinois Traction, later Illinois Terminal (IT), serving major routes across central Illinois. But McKinley was frustrated in his efforts to reach downtown St. Louis, Mo. across the Mississippi River from Illinois on the existing Eads railroad bridge. McKinley built his own bridge in 1910, entering St. Louis from the northeast. Between St. Louis and its suburbs in Illinois, interurban trains, local trains, and trains hauling express freight all co-mingled on IT tracks. Among the locals, the short-distance cars to Granite City, Ill. had extensive street running at the outer end and cannot be compared with commuter trains, but the longer branch to Alton, Ill. was like commuter rail in its length and right-of-way.

Within St. Louis, IT ran mostly on city streets to a terminal on the north edge of downtown. Slow speeds affected IT’s operations and attractiveness. Business was outgrowing the cramped freight and passenger terminal when the city announced plans to widen the street where the terminal was located. IT accordingly started work on major improvements in the late 1920s. In 1931, IT opened a new 2.6-mi, largely elevated alignment, eliminating all but two blocks of street running, and in 1933 began service to a new combined freight and passenger terminal reached via a short subway (10).

This resulted in faster running times, and IT could now operate conventional freights into St. Louis. But the St. Louis improvements opened during the Depression,
after the prosperity of the 1920s had ended. Postwar suburbanization did not help attract riders, as IT’s catchment area consisted of industrial districts and adjacent towns where relatively few residents worked downtown.

The Alton branch was abandoned in 1953, as its aging cars and track faced a dwindling future. Although IT bought modern, streamlined streetcars for Granite City services in 1949, ridership fell from 4.96 million in 1947 to 1.26 million in 1956. IT obtained permission to discontinue Granite City service, which ended in 1958 (11).

By the 1980s, when St. Louis transit officials were planning light rail, the Eads Bridge that McKinley unsuccessfully sought to use became available, along with an adjacent freight tunnel under downtown St. Louis. The MetroLink light rail opened in 1993 using this advantageously-located route (12). There are plans to convert some of IT’s now-abandoned St. Louis alignment into a bicycle and pedestrian path.

**SURVIVING LINES**

Two of these lines have survived to the present – one by becoming a suburban rapid transit line, and the other by becoming an electrified commuter railroad with a significant freight business.

**Philadelphia & Western**

The Philadelphia & Western (P&W) was originally envisioned as linking with other railroads as far as Chicago and beyond, but this never came about. Instead, P&W opened in 1907 as a fully grade-separated interurban, electrified with third-rail and equipped with high-platform stations, competing with the Pennsylvania Railroad (PRR) to serve an affluent suburban area.

Originally, P&W’s main line ran northwest to Strafford, Penna., from where extensions were planned but never built. In 1912 the railway opened a branch north from Villanova to Norristown, Penna., which became the main line with the 1956 abandonment of the Strafford line. Between 1912 and 1949, P&W’s Norristown line also hosted Lehigh Valley Transit, a largely single-track interurban to Allentown, Penna. that was an intercity rather than a commuting line.

Instead of reaching central Philadelphia, P&W terminated on the city’s outskirts at the 69th St. terminal of the Market-Frankford elevated line. Nevertheless, compared to its rival PRR, P&W had lower fares and offered around twice the service. Before PRR electrified its suburban service in 1915, P&W’s “travel time to Philadelphia, including the transfer at 69th Street Terminal, was only about two minutes longer than the PRR” (13).

Between 1924 and 1929, P&W acquired better-performing steel heavyweight cars and retired its original wooden-bodied equipment. But ridership declined even before the Depression, due to competition from the automobile. Seeking a bold modernization strategy, P&W brought in noted interurban expert Dr. Thomas Conway as president in 1930. Conway ordered new lightweight streamlined cars with aerodynamic ends that anticipated intercity passenger train design. Introduced in 1931, these rapidly-accelerating “bullet” cars became emblematic for P&W.

Increased ridership during World War II lifted P&W out of bankruptcy in 1946, leading to its purchase in 1954 by Red Arrow, a larger suburban transit company.
Although Red Arrow abandoned two of its four suburban trolley lines, the P&W’s grade-separated alignment and frequent, fast service gave it a continued ridership base. In 1970, the Southeastern Pennsylvania Transportation Authority (SEPTA) bought Red Arrow, securing the line’s future as the Norristown High-Speed Line (14). But deferred maintenance and disinvestment began to show by the 1980s, when the cars’ age was affecting reliability (although some lasted until 1990). Accordingly, SEPTA bought secondhand Chicago rapid transit cars as a stopgap measure and rebuilt the line completely, including new cars (delivered in 1993-1994) and renewed track (15). Today, NHSL has a modest but solid ridership base (2.76 million in 2012) as a suburban rapid transit line, with more reverse commuting than traditional downtown-bound travel.

**Chicago, South Shore & South Bend**

The Chicago, Lake Shore & South Bend opened as an interurban in 1908 without reaching Chicago directly. Initially, Chicago-bound passengers transferred to steam-operated Illinois Central (IC) commuter trains at Kensington-115th St. on Chicago’s South Side. Starting in 1912, IC steam locomotives brought some interurban trains directly to and from downtown. But the interurban failed to attract a large ridership, and faced uncertain prospects.

In early 1925, electric utility entrepreneur Samuel Insull bought the worn-out line. Reorganized as the Chicago, South Shore & South Bend (South Shore Line), it was rebuilt into a fast electric railroad with new heavyweight steel cars by August 1926 (16). The railroad was reelectrified for compatibility with IC’s suburban electrification, which opened that summer, and South Shore trains have reached downtown Chicago directly ever since. The newly-rebuilt interurban was double-tracked to Gary, and then largely single-track to Michigan City and South Bend, Ind.

Freight enabled South Shore to survive the Depression. World War II brought much passenger and freight business to the industrial area between Chicago and Gary, with ridership reaching 6 million in 1945. To add capacity, South Shore’s shops lengthened several cars. The rebuilding program continued into the postwar years, with air-conditioning also added for passenger comfort.

In 1956, South Shore replaced 2 mi of street running in East Chicago, Ind. with a fully grade-separated bypass, using land the railroad bought for the purpose in 1927 (17). The Indiana Toll Road Commission paid $850,000 to build its highway along this right-of-way, and as part of the agreement built South Shore a 5-mi alignment alongside the highway, engineered for two tracks. The railroad added tracks, electrification, signals, and a new East Chicago station at its own expense. In 1970, South Shore truncated its line on the west side of South Bend, Ind., just short of 2 mi of street running to reach downtown (18). A 2-mi stretch of street running remains in Michigan City.

In 1967, freight railroad Chesapeake & Ohio bought the South Shore in a friendly acquisition, guaranteeing its future (successor Chessie System sold it to a regional railroad in 1984). Today, a subsidiary of a short-line holding company has exclusive freight rights.

The late 1970s were difficult for South Shore’s aging fleet as harsh winters forced reductions and even suspensions of service. In 1976 the railroad asked the Interstate Commerce Commission for permission to end passenger service. The agency approved
the end of service, but delayed the ruling’s effect by ten months to give Indiana officials
time to find a lasting resolution. Accordingly, Indiana’s lawmakers created the Northern
Indiana Commuter Transportation District (NICTD) to secure the South Shore Line’s
future (19).
NICTD funded operations, upgraded the physical plant, and bought much-needed
new cars (20). In 1990, NICTD acquired the railroad in Indiana (the freight railroad
owns the short Illinois segment). In 1992, NICTD moved from the 1970 South Bend
station to a new South Bend Airport station reached largely by a freight spur.
NICTD performs an important transportation function, linking northern Indiana
with Chicago via Metra’s Electric District, successor to the IC suburban service. Its 3.66
million ridership in 2012 compared favorably with its 3.1 million ridership in 1965.
In 2009, NICTD reworked its weekend schedule (on a two-hourly “memory”
basis since 1991) to improve reliability and better accommodate increasing ridership (21).
Studies are underway for two proposed improvements: a Michigan City rerouting to
eliminate street running (22), and a new western approach to South Bend Airport.
NICTD is also studying new service on a north-south line in a growing suburbanized part
of Lake County, Ind.

PARTIAL SERVICE RESTORATION
Although most interurbans were abandoned with no successor service, rail transit has
been restored, in different forms, on several commuter-style interurbans.

Chicago, North Shore & Milwaukee
A predecessor of the Chicago, North Shore & Milwaukee (North Shore) began in 1891 as
a street railway in the satellite city of Waukegan, Ill., reaching Evanston, Ill., adjacent to
Chicago, in 1899. To the north, it reached Milwaukee, Wis. in 1908 via 2-¾ mi of street
running, and a few local trains served Milwaukee on commuter-friendly schedules. To
the south, passengers were able to connect with rapid transit trains to Chicago from 1906
on. In a market already served by C&NW and the Milwaukee Road, North Shore
focused on greater frequency and more stops.
Samuel Insull, who also owned the city’s elevated rapid transit, or ‘L’ system,
bought the North Shore Line in 1916 (23). Three years later, North Shore began direct
service to Chicago’s downtown Loop area via the Howard (North Side) ‘L’. Despite fast
running north of Waukegan, grade crossings, closely-spaced stations, and some street
running slowed the North Shore in the busy suburban zone between Evanston and
Waukegan. Adjacent steam railroad C&NW was faster, although North Shore service
was more frequent and offered better downtown distribution.
North Shore needed to increase speed and capacity, but grade-separating and
installing quadruple-track on the Shore Line Route alignment through built-up suburbs
was prohibitively expensive. Therefore, North Shore opened the Skokie Valley Route
between the Chicago city limits and North Chicago, just short of Waukegan, in 1926.
This 23-mi bypass in a largely undeveloped zone was built to railroad standards for
speeds of up to 80 mph, with heavily-ballasted track, gentle curves, and compound
catenary rather than the basic trolley wire found on most interurbans (24).
Insull expected the Skokie Valley Route to hasten suburban development, but the Great Depression drove his holdings into bankruptcy in 1932. When large-scale homebuilding resumed in the 1950s, the automobile was the dominant transportation mode.

From a 1945 peak of nearly 28 million passengers, North Shore traffic had dropped to less than 10 million within only three years. As traffic continued to fall, the railroad found it increasingly difficult to operate at a profit. … From 1947 onward the North Shore reported annual net losses … (25).

North Shore’s original Shore Line Route had a large reverse commute business, with roughly similar rush-hour flows in both directions. A joint grade separation through Winnetka for C&NW and the North Shore (completed in 1941) expedited the Shore Line Route marginally. In 1955 North Shore abandoned the Shore Line Route, leaving the Skokie Valley Route as its sole link to Chicago.

C&NW started modernizing its commuter service in the late 1950s, and the Milwaukee Road, another competitor, soon followed suit. But except for two streamlined electric trainsets delivered in 1941 for Chicago – Milwaukee intercity service, North Shore’s cars were mainly built between 1915 and 1930. North Shore could not afford new cars, as there was little freight business to offset losses from passenger service.

North Shore’s ridership (including commuters, Chicago – Milwaukee riders and others), had fallen from 16 million in 1926 to 4 million by 1960. Construction of expressways linking Chicago with the Skokie Valley put the interurban in an untenable position, and it applied for complete abandonment in 1958. The end came in January 1963, after a commuter group failed to raise enough money to buy and operate the line.

The Chicago Transit Authority, operator of the ‘L’ since 1947, studied the North Shore Line before its abandonment. CTA could not afford to run the interurban without a guarantee against financial loss, but found it was operationally feasible to run rapid transit trains on the Skokie Valley Route, the Mundelein branch, and the main line to Waukegan (26).

Although federal funding came too late to save the interurban, a federal demonstration grant brought about a partial return of service. In April 1964, CTA revived the Skokie Valley Route’s initial 5-mi segment between Howard St. and Dempster St., Skokie, operated initially as the Skokie Swift and today as CTA’s Yellow Line (27). CTA is actively planning to extend the Yellow Line to the Old Orchard shopping center.

Metra’s Union Pacific North Line (successor to C&NW’s commuter service) parallels the former Shore Line Route for most of the distance between Wilmette and North Chicago. It is the fourth-busiest line on Metra, the northeastern Illinois commuter rail system.

Pacific Electric
In the early 20th century, before Los Angeles’ freeways were built, the interurban lines of Pacific Electric (PE) established southern California’s major transportation corridors.

Although Los Angeles was then smaller than most cities with steam railroad commuter service, its rapid growth made it a good match for the emerging technology of interurban
Commuter-Style Interurban Railways  Allen and Levinson

railways. PE’s original line south from Los Angeles to Long Beach, which opened in 1902, was largely designed for fast operation. Other well-engineered branches radiating from this line opened in the following years, forming the Southern District.

Acquired by Southern Pacific (SP) in 1910, PE spread in all directions from downtown Los Angeles (28). PE’s Main St. terminal, reached via short street-running segments on the edge of downtown Los Angeles, served the Northern and Southern Districts. Several Northern District lines in the San Gabriel Valley northeast of downtown had street running at the residential ends, but the Pasadena Short Line, Pasadena Oak Knoll, and Pomona lines had extensive private rights-of-way. (PE’s Western District lines are not considered, as they were mainly operated with and engineered for streetcars rather than heavier, faster interurban equipment.)

PE’s large heavyweight interurban cars (supplemented with streetcars for local service) made its Northern and Southern Districts comparable to commuter rail. PE abandoned some lines in the 1930s, but when the US entered World War II, “vast crowds of automobile-deprived war workers turned to PE for transportation” (29, p. 2). To help handle increased ridership, the US Maritime Commission and PE acquired large cars from parent railroad SP and its subsidiary Northwestern Pacific, which had discontinued their San Francisco, Calif.-area electrified commuter operations in 1941.

But after World War II, PE moved quickly to end Northern District service, including the Pomona and Pasadena Oak Knoll lines in 1950, and the Pasadena Short Line in 1951. SP wanted to use PE’s tracks for freight only, and PE sold its passenger services (many of which were already converted to bus) to a new entity, Metropolitan Coach Lines (MCL), which took over in 1953 with the promise to PE that it would quickly seek conversion of the last rail passenger operations to buses. This MCL did, and by 1955 … [there were] only four rail routes (all on the Southern District) … (30).

The Los Angeles Metropolitan Transit Authority (a predecessor of today’s Los Angeles County Metropolitan Transportation Authority) took over MCL and the city transit system in 1958, but abandonments continued. As there was no federal capital funding yet for renewing rail lines, new buses were more affordable. In 1961 the Long Beach line, the first to open, became the last to close.

As metropolitan growth continued over the next quarter-century, interest in rail transit grew. In 1990, most of PE’s Los Angeles – Long Beach line reopened as the light rail Blue Line (now one of North America’s busiest light rail lines). Much of this line remained in freight service, which may have helped preserve the Blue Line for modern transit use, although freight operations have since been relocated elsewhere. Under PE, Long Beach line ridership peaked at 1.4 million in 1946. The Blue Line carried 25.7 million trips in 2005.

Originally, PE served Los Angeles’ historic commercial district with a major terminal. The downtown core shifted several blocks to the west after World War II, rendering the former Main St. terminal unsuited for modern travel patterns. The solution was a new alignment in reserved portions of two streets south of downtown to reach a short subway serving the modern downtown.

Light rail has continued to expand in PE’s shadow. The Gold Line to Pasadena, opened in 2003, uses a former Santa Fe railroad alignment distinct from but adjacent to
Commuter-Style Interurban Railways

Allen and Levinson

PE’s Pasadena Short Line. The Expo Line, a Blue Line offshoot, opened in 2012 on a PE alignment (abandoned in 1953) with infrequent service during the PE era. Urban development since then has increased the Expo Line’s potential as a transit corridor. An extension from Culver City to Santa Monica, Calif. was nearing completion in 2015.

Sacramento Northern

The East Bay area around Oakland, Calif. underwent much residential growth in the aftermath of the 1906 San Francisco earthquake, thus creating new demand for transit. The Oakland, Antioch & Eastern (OA&E) interurban railway opened in 1911 partly in response to this demand. “The Coast Range hills behind Oakland had always posed a problem to railroad engineers; both SP and [Santa Fe] had cautiously avoided the direct route … The interurban, however, went through these hills …” (31).

OA&E had trackage rights, including about a mile of street running on the Key System, a local electric railway that also operated ferries between downtown San Francisco and its Oakland ferry terminal. Leaving Key System tracks, OA&E followed a private right-of-way through the Oakland Hills to a 3600-ft tunnel under the summit before descending to outer suburban communities (32).

Reorganized in 1920 as the San Francisco-Sacramento Railroad, the interurban modernized as its finances allowed. In December 1928 the San Francisco-Sacramento became part of Sacramento Northern (SN), a subsidiary of steam railroad Western Pacific (WP), creating a single interurban from Oakland to Sacramento and beyond. WP intended to incorporate parts of SN into its own main line until the Depression halted these plans.

In January 1939 a two-track rail line, used by SN, Key System, and Southern Pacific’s Oakland-area electric commuter trains opened on the lower level of the San Francisco-Oakland Bay Bridge, bringing trains of all three carriers to the then-new Transbay Terminal in downtown San Francisco, eliminating the change between trains and ferries. But in 1940 the bridge authority lowered automobile tolls from 65¢ to 25¢, making rail services less competitive. “SN management reluctantly came to the conclusion that the company would have to get out of the passenger business … Its applications were granted with little or no opposition” (31). Intercity passenger service between San Francisco and Sacramento ended in 1940, and commuter service to Concord and Pittsburg ceased in 1941.

After SN’s former Oakland landlord Key System abandoned rail service in 1958, San Francisco’s East Bay communities relied on highways and buses for the next decade and a half. The opening of Bay Area Rapid Transit (BART) in 1972 has helped make transit important for the East Bay. BART follows the SN alignment in parts of the Oakland Hills and between Walnut Creek and North Concord, although the interurban heritage is not apparent today. BART either runs above the former SN on aerial structures or on completely re-graded right-of-way, with portions running in the median of a freeway built before the rapid transit was added.
The experiences of these interurbans varied greatly. Taken together, however, they sketch out a broad historical trajectory:

- Commuter-style interurbans opened during the first two decades of the 20th century.
- Most of these lines prospered during the 1920s, when several modernized to very high standards. To provide faster service, some even built new alignments between the late 1920s and early 1930s.
- Starting in late 1929, the Great Depression threatened the interurban industry’s survival, as many marginal lines ceased operations. Generally, commuter-style interurbans were better capitalized and had a stronger traffic base. Nevertheless, all but two of these properties ended service by 1963.
- Since the 1960s, there has been a partial comeback aided by public funding, as modern rail transit lines use several alignments once used by (or similar to) these and other interurbans.

Their experiences illustrated several elements:

- The Depression weakened commuter-style interurbans, but post-World War II suburbanization eliminated most of them altogether.
- Although many commuter-style interurbans lasted into the 1950s or early 1960s, lawmakers did not yet appreciate the social value of regional transit.
- Saving most of these interurbans would have required institutional and financial capacities that were not yet in place. City-based transit authorities in Chicago and Los Angeles could not save these lines, although Philadelphia’s regional authority bought and later rebuilt today’s Norristown High-Speed Line. To its credit, CTA investigated operating the closer-in parts of the North Shore Line and CA&E, and concluded that this would be feasible if additional operating funds materialized. Yet CTA’s mandate was limited to the city and its immediate suburbs, and the Regional Transportation Authority (created in 1973-1974) came too late to save CA&E or North Shore service. Similarly, the Los Angeles Metropolitan Transit Authority (a predecessor of today’s more comprehensive Los Angeles County Metropolitan Transportation Authority) lacked the resources to modernize a shrinking and dilapidated Pacific Electric.
- Ownership by a main line railroad did not necessarily save interurbans. The railroads that bought Pacific Electric and Sacramento Northern eventually discontinued their passenger services, and kept only those segments that were useful for rail freight.
- Passenger-dependent interurbans had difficulty surviving after the 1920s. Railroads commonly used freight revenues to offset losses incurred from commuter service until public agencies started providing subsidies in the 1960s and 1970s—an option unavailable to most interurbans. Aside from the Philadelphia & Western, which was purchased by a suburban transit company, and the South Shore Line, which served a major industrial area, other commuter-style interurbans were unable to sustain their operations into the modern era.
- New highways were detrimental to commuter-style interurbans. The San Francisco – Oakland Bay Bridge hastened the end of SN service. In Chicago, one
expressway competed directly with the North Shore Line, and the construction of another
forced the Chicago, Aurora & Elgin off the ‘L’, making it unable to compete with the
automobile or rival Chicago & North Western. Only the South Shore Line was able to
turn highway construction to partial advantage with the East Chicago bypass.

Experiences of other commuter-style interurbans bear out these points. The
Lackawanna & Wyoming Valley linked Scranton and Wilkes-Barre, Penna. with a high-
quality right-of-way suited for a much larger metropolitan area. This line operated heavy
steel cars on frequent schedules. Passenger service lasted as late as 1952, and a freight
railroad acquired the interurban in 1960 (33).

Two other interurbans survived into the regional transit era as freight carriers, thus
preserving their rights-of-way for rail transit use. The Baltimore & Annapolis operated
interurbans until 1950. Small amounts of continued freight service helped save parts of
the alignment. Since 1992, a light rail line has reused the Baltimore & Annapolis
alignment for much of the alignment south of downtown Baltimore. (34).

The Washington & Old Dominion, terminating in northern Virginia and requiring
riders to reach downtown Washington, D.C. via streetcars, ceased service on a shorter
suburban line in 1934 and on a longer route in 1941 (although service was restored
between 1943 and 1951 using secondhand self-propelled railcars). The railroad
continued to carry freight until its abandonment in 1968. Much of the line was converted
into a recreational trail, but a portion of the alignment was heavily re-graded for
construction of the I-66 freeway. In 1986 the Washington Metro’s Orange Line was
added in a section of the median strip (35).

INTERURBAN COMMUTER LEGACY
In addition to their history, commuter-style interurbans offer lessons for transportation
planning today:

• Although poor long-term investments, commuter-style interurbans often served
important travel corridors. Of the lines examined in detail, the outcomes differ
significantly from those of most interurbans, which were abandoned by the 1930s. Two
(nor the Norristown High-Speed Line and the South Shore Line) survive today.
• After abandonment, three of the interurbans examined here—North Shore, Pacific
Electric, and Sacramento Northern—have had rail transit revived on parts of their
alignments. Commuter trains continue to operate adjacent to parts of a fourth interurban
(Chicago, Aurora & Elgin).
• Only two of these interurbans—the Milwaukee Electric and Illinois Terminal—
were abandoned with no nearby or successor regional rail service. The inner part of the
Milwaukee Electric alignment has been reused for an urban freeway.
• On the Pacific Electric, former interurban tracks remained in service for freight,
preserving the alignment for modern rail transit. This parallels experiences in San Diego,
Calif. and St. Louis, where underused freight railroad lines were turned into light rail.
• Converting abandoned rail lines into recreational trails preserves the right-of-way,
as with the Chicago, Aurora & Elgin. However, this can create new constituencies that
might oppose using preserved alignments for other transportation purposes.
Light rail transit is sometimes seen as modern streetcar technology, but the design and operating philosophy of light rail also resembles those of early 20th century interurbans, with fast, reserved trunk lines and slower mixed-traffic distribution in downtown areas. Modern light rail systems use railroad and other rights-of-way to combine speed and flexibility, much as early 20th century interurbans did.

At first glance, little seems to remain of commuter-style interurbans. The Philadelphia & Western, located in a major transit corridor, survived partly through absorption into a larger transit company. In northern Indiana, the South Shore Line was transformed from a well-engineered interurban into an electrified commuter railroad with interurban roots. The others were abandoned by 1963.

Yet commuter-style interurbans leave no small legacy. The well-located and well-built interurbans examined here have survived or have had service revived on portions of their lines far more than the interurban industry in general. Furthermore, many new light rail lines combine railroad or railroad-like alignments for line-haul travel with other right-of-way types for local distribution in a manner reminiscent of traditional interurbans. The commuter-style interurban may be largely forgotten, but it is far from gone.

REFERENCES


### TABLE 1 Characteristic Features of Various Rail Transit Types

<table>
<thead>
<tr>
<th>Feature:</th>
<th>Traditional Streetcars</th>
<th>Rail Rapid Transit</th>
<th>Modern Light Rail</th>
<th>Traditional Interurbans</th>
<th>Commuter-Style Interurbans</th>
<th>Modern Commuter Rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line engineered to railroad standards</td>
<td>No</td>
<td>Rarely</td>
<td>Often (outside downtown area)</td>
<td>Sometimes</td>
<td>Usually, with occasional exceptions</td>
<td>Yes, throughout</td>
</tr>
<tr>
<td>Street running</td>
<td>Yes</td>
<td>No</td>
<td>Street running or subway in downtown area</td>
<td>Normal in cities and towns</td>
<td>Sometimes, in moderate amounts downtown or elsewhere</td>
<td>No (except for one commuter railroad with interurban origins)</td>
</tr>
<tr>
<td>High platforms</td>
<td>No</td>
<td>Yes</td>
<td>Some systems</td>
<td>No</td>
<td>Rarely (A)</td>
<td>Most common in New York area, some in Philadelphia and Chicago</td>
</tr>
<tr>
<td>Electric pickup</td>
<td>Trolley wire, 600 V DC</td>
<td>Third rail; rarely overhead wire, 600 to 750 V DC</td>
<td>Overhead wire; 750 V DC</td>
<td>Trolley wire; rarely third rail; 600 V DC</td>
<td>Overhead wire (occasionally third rail); usually 600 V DC</td>
<td>Often diesel, but if electrified, overhead wire or third rail, ranging from 700 V DC to 25,000 V AC</td>
</tr>
<tr>
<td>Freight service</td>
<td>No</td>
<td>No (B)</td>
<td>Rarely; if so, runs at night</td>
<td>Usually minor in scale (C)</td>
<td>Yes, though not universally so</td>
<td>Yes, though varies widely by line</td>
</tr>
<tr>
<td>Diaphragms between cars</td>
<td>No – not applicable</td>
<td>No</td>
<td>No – not applicable</td>
<td>Rarely</td>
<td>Rarely (D)</td>
<td>Usually; less common in New York, New Jersey, and Philadelphia</td>
</tr>
<tr>
<td>Anticlimbers at ends</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Usually</td>
<td>Usually</td>
<td>No</td>
</tr>
<tr>
<td>Destination signs</td>
<td>Yes</td>
<td>Usually</td>
<td>Yes</td>
<td>Usually</td>
<td>Usually</td>
<td>Sometimes, particularly in New York and Philadelphia</td>
</tr>
</tbody>
</table>

NOTE: A – The Philadelphia & Western was built with high-level platforms throughout, and all three Chicago interurbans (South Shore Line, Chicago Aurora & Elgin, and North Shore Line) used them on their downtown access routes and on selected outlying stations. B – The South Brooklyn Railway (freight) has very limited track sharing with New York City Transit, and the Chicago Transit Authority had limited freight service on part of one line until 1973. C – Interurbans commonly offered some freight service, usually limited in scale; several lines were restricted to less-than-carload service. D – The South Shore Line has always used diaphragms between cars. AC – Alternating current. DC – Direct current. V – Volts.
### TABLE 2 Principal Characteristics of Commuter-Style Interurbans

<table>
<thead>
<tr>
<th>System: Abandoned Interurbans – No Successor Rail Transit Service</th>
<th>Passenger Service:</th>
<th>Route-Miles:</th>
<th>Annual Ridership, M:</th>
<th>Downtown Access Via:</th>
<th>Co-Mingling With:</th>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago, Aurora &amp; Elgin</td>
<td>1902-1957</td>
<td>61 max. (1952)</td>
<td>Rapid transit trackage rights</td>
<td>Rapid transit trains; freight</td>
<td>Direct downtown service ended in 1953 to accommodate expressway construction</td>
<td></td>
</tr>
<tr>
<td>TM (West Side Rapid Transit)</td>
<td>1927-1949</td>
<td>8.9 (A) NA</td>
<td>PROW, street</td>
<td>Streetcars</td>
<td>Inner portion reused for freeway</td>
<td></td>
</tr>
<tr>
<td>Illinois Terminal (St. Louis – Alton, Ill.)</td>
<td>1910-1958</td>
<td>NA NA</td>
<td>Bridge, elevated, street, subway</td>
<td>Freight, regular interurbans</td>
<td>Abandoned</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>System: Surviving Interurbans</th>
<th>Passenger Service:</th>
<th>Route-Miles:</th>
<th>Annual Ridership, M:</th>
<th>Downtown Access Via:</th>
<th>Co-Mingling With:</th>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philadelphia &amp; Western</td>
<td>1907-present</td>
<td>13.4 (B) 2.76 (2012)</td>
<td>Transfer to rapid transit</td>
<td>(C)</td>
<td>Now Norristown High-Speed Line (rail rapid transit)</td>
<td></td>
</tr>
<tr>
<td>Chicago, South Shore &amp; South Bend</td>
<td>1908-present</td>
<td>90 (D)</td>
<td>Commuter rail trackage rights</td>
<td>Commuter rail; freight</td>
<td>Now Northern Indiana Commuter Transportation District (commuter rail)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>System: Abandoned Interurbans – Rail Transit Subsequently Restored on Portions</th>
<th>Passenger Service:</th>
<th>Route-Miles:</th>
<th>Annual Ridership, M:</th>
<th>Downtown Access Via:</th>
<th>Co-Mingling With:</th>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago, North Shore &amp; Milwaukee (Chicago end only)</td>
<td>1899-1965, part revived in 1964</td>
<td>117 (E) 16 (1926) 94 (F) 4 (1960)</td>
<td>Rapid transit trackage rights</td>
<td>Rapid transit trains; freight</td>
<td>5-mi portion reused for rapid transit</td>
<td></td>
</tr>
<tr>
<td>Pacific Electric (Data for Long Beach line only)</td>
<td>1902-1961, revived 1991</td>
<td>20 13.4 (1946) 25.7 (2005)</td>
<td>PROW, street</td>
<td>Streetcars; freight</td>
<td>Owned by freight railroad; much of three lines reused for or adjacent to light rail</td>
<td></td>
</tr>
<tr>
<td>Sacramento Northern (San Francisco – Oakland)</td>
<td>1911-1940, part reused in 1972</td>
<td>47 (G) NA</td>
<td>(H) Streetcars; freight</td>
<td>Owned by freight railroad; portion reused for limited-access highway, rapid transit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3  Service Levels on Commuter-Style Interurbans and Successor or Adjacent Operations

<table>
<thead>
<tr>
<th>Original Commuter-Style Interurban</th>
<th>Year</th>
<th>Weekday trains</th>
<th>Successor or Adjacent Operation (where applicable)</th>
<th>Year</th>
<th>Weekday Schedules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philadelphia &amp; Western</td>
<td>1974</td>
<td>235 (A)</td>
<td>SEPTA – Norristown High-Speed Line</td>
<td>2015</td>
<td>203 (B)</td>
</tr>
<tr>
<td>Chicago, North Shore &amp; Milwaukee</td>
<td>1941</td>
<td>170 (C)</td>
<td>CTA – Yellow Line (D)</td>
<td>2015</td>
<td>Every 10 to 15 minutes</td>
</tr>
<tr>
<td></td>
<td>1962</td>
<td>87 (E)</td>
<td>Metra Union Pacific North Line (F)</td>
<td>2015</td>
<td>69 daily trains</td>
</tr>
<tr>
<td>Chicago, Aurora &amp; Elgin</td>
<td>1950</td>
<td>146 (G)</td>
<td>Abandoned, but Metra Union Pacific West Line runs near part of core main line segment</td>
<td>2015</td>
<td>59 daily trains on Metra Union Pacific West</td>
</tr>
<tr>
<td></td>
<td>1953</td>
<td>106 (H)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicago, South Shore &amp; South Bend</td>
<td>1964</td>
<td>49</td>
<td>Northern Indiana Commuter Transportation District</td>
<td>2015</td>
<td>43 daily trains</td>
</tr>
<tr>
<td>TM (West Side Rapid Transit)</td>
<td>N/A</td>
<td>NA</td>
<td>Abandoned; part of alignment used by freeway</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Illinois Terminal (I)</td>
<td>1943</td>
<td>37</td>
<td>Abandoned; no successor rail service.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Pacific Electric – Long Beach</td>
<td>1959</td>
<td>94</td>
<td>LACMTA – Blue Line</td>
<td>2015</td>
<td>Every 6 to 12 minutes</td>
</tr>
<tr>
<td>Pacific Electric – Pasadena Short Line</td>
<td>1939</td>
<td>100</td>
<td>LACMTA – Gold Line (J)</td>
<td>2015</td>
<td>Every 12 minutes or less</td>
</tr>
<tr>
<td>Sacramento Northern</td>
<td>1940</td>
<td>12</td>
<td>Bay Area Rapid Transit (Concord-Pittsburg)</td>
<td>2015</td>
<td>Every 5 to 15 minutes</td>
</tr>
</tbody>
</table>

NOTE: NA – Not available. N/A – Not applicable. CTA – Chicago Transit Authority. LACMTA – Los Angeles County Metropolitan Transportation Authority. SEPTA – Southeastern Pennsylvania Transportation Authority. TM – The Milwaukee Electric Railway & Light. A – SEPTA acquired the line in 1970, but the 1974 schedule was broadly reflective of earlier service patterns. B – For comparison, the partly-competing ex-Pennsylvania Railroad Main Line, now SEPTA’s Paoli-Thorndale line, had 107 weekday trains stopping at any or all stations between Ardmore and Radnor in 1974, and 83 such trains in 2015. C – Includes 95 trains on the local Shore Line Route, 38 expresses to/from Milwaukee via the Skokie Valley Route with limited commuter stops, and 37 Skokie Valley Route locals. D – Uses portion of Skokie Valley Route; passengers change at Howard for service to downtown. E – Does not include 62 shuttles and other local trains not serving Chicago. F – Parallels most of former Shore Line Route. G – Direct service to downtown Chicago. H – Passengers changed to Chicago Transit Authority at Desplaines Ave. (now Forest Park) for service to downtown Chicago. I – Data for Alton service; shorter Granite City service not included. J – Runs on former railroad alignment adjacent to, but not on Pacific Electric’s Pasadena Short Line.