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How Infrastructure Decisions from the Past Shape Our Ability to Improve Systems in the Future: Phoenix Metro

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I. Introduction

1.1 The Problem of Inherited Infrastructure

Phoenix, Arizona, and its surrounding metropolitan area have quickly become among the nation's fastest-growing cities. In the last 30 years, the population has doubled from 2.4 million to 4.8 million. Phoenix's rise through the 70s and 80s coincides with the peak era of car-centric infrastructure. As the city continued to expand, newer communities extended the existing infrastructure outward, creating urban sprawl. As communities began to form along the city's streets and roads, a dependence on cars emerged. Path dependency occurs when a system's historical development significantly influences its present and future (Pierson, "Increasing Returns, Path Dependence, and the Study of Politics," APSR, 2000; Sorensen, "Taking Path Dependence Seriously," Planning Perspectives, 2015) Today, the Phoenix metro is caught in a cycle of path dependency, with the vast majority of commuters left with only one mode of transportation. Phoenix represents an extreme example of inherited mode dependency typical of a Sun Belt city.

1.2 Research & Scope

Throughout Phoenix's 140-year transportation history, numerous monumental decisions have shaped today's environment. This project aims to see how each significant moment in The Valley's transportation timeline has affected present and future infrastructure improvements. Which decisions have enabled or constrained Phoenix's ability to upgrade its transit network to accommodate an increasing population? The focus of the research will be on the transportation infrastructure system in the Phoenix Metropolitan area, with some references to the Arizona Department of Transportation (ADOT) statewide. Research into the past will only extend to 1887, when Phoenix opened its first trolley car line, and future speculation will be limited to near-term planning.

II. The Trolley Era

2.1 The Rise of The Trolley System

In 1887, Phoenix was a small desert town with dirt roads and small adobe-style buildings. The main form of transportation was horse-drawn wagons or walking through the small urban core. Still, in an effort to sell real estate, General Moses Hazeltine Sherman opened the first street railway along Washington Street (Phoenix Trolley Museum, phxtrolley.org; Valley Metro, "History of Streetcar and Light Rail in Phoenix," storymaps.arcgis.com). The trolley was pulled by mules from 1887 to 1893, when an electric trolley replaced them (Phoenix Trolley Museum, phxtrolley.org). The goal of these lines was not purely civic service but also to increase development. The arrival of the streetcar rapidly turned empty, cheap parcels into sellable residential and commercial space. The first era of Phoenix's streetcar network is defined by its role in creating an urban form. Before Arizona became a state in 1912, Phoenix developed into a multi-modal and vibrant urban community, as seen in Figure 1.

Figure 1: Washington Street, 1910

With the success of the trolley system's origin in developing a profitable urban community, the system continued to expand through the early 1900s. Continuing General Moses Sherman's concept, the Phoenix Street Railway expanded to over twenty miles of track by the 1920s (Valley Metro, "History of Streetcar and Light Rail in Phoenix," storymaps.arcgis.com). The expansions included the Glendale/Orangewood Line, the Indian School Line, the Kenilworth Line, and others. These lines extended well past the original city center into emerging neighborhoods and into the city's agricultural outskirts. As seen in Figure 2, the Kenilworth line led to the development of one of Phoenix's oldest walkable, middle-class neighborhoods (Historic Phoenix Districts, historicphoenixdistricts.com). In historical aerial imagery, the narrow streets are lined with trees, sidewalks, and medium-density lots. Similar neighborhoods appeared where electrified streetcars reached; these neighborhoods were not intentionally developed for walkability, but they emerged in an era where multiple modes of transportation were available.

Figure 2: Kenilworth Line, 1930

By the mid-1920s, the system began showing signs of aging and operating at a loss. The 12-mile Glendale Expansion proved to be unprofitable due to limited demand and extensive maintenance costs. Seeing the system as a civic good, the City of Phoenix purchased it from Sherman's holding company in 1925. In 1927, the City proposed a $750,000 bond to renovate the system with new tracks and stock (Phoenix Trolley Museum, phxtrolley.org). As chronicled in articles from *The Arizona Republic*, the debate over the bond opened a rift in Phoenix's civic transportation culture. Those who supported the bond argued that the trolleys would reduce car congestion and help Phoenix become "a modern metropolitan city." Those opposed to the streetcar argued that the system was unprofitable and that the bonds could be used to improve other public services. Ultimately, the bond passed, and new streetcars and track improvements were ordered that same year. According to the Phoenix Trolley Museum, Car #116, which has been preserved, had traveled over 15.5 million miles on Phoenix's rail system. These bonds led to the system's peak in 1928, as seen in Figure 3. The street railway was extensive for the relatively small population of the time.

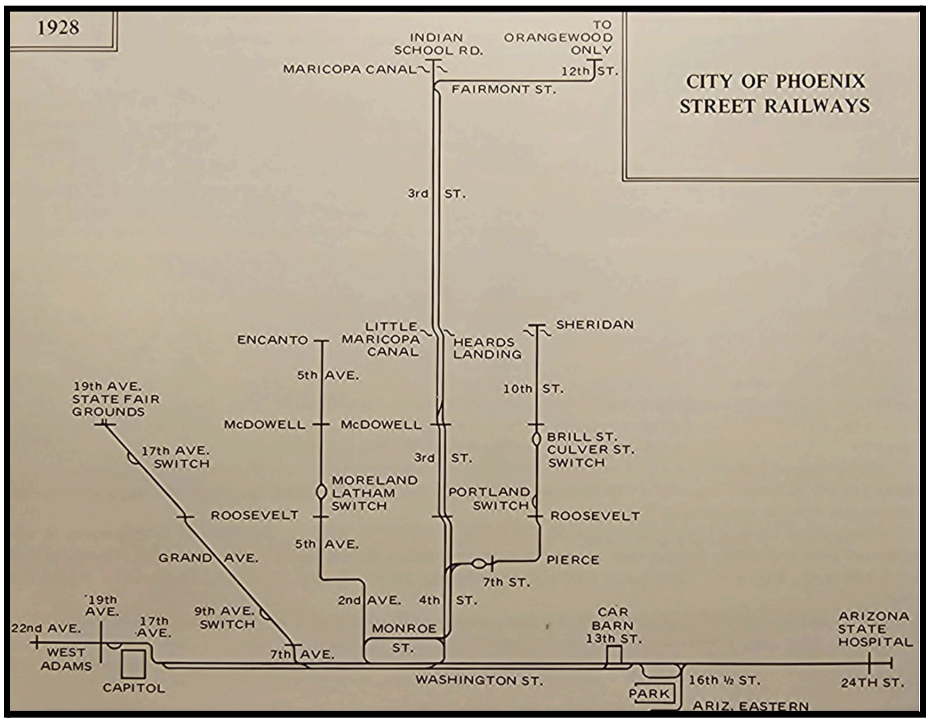


Figure 3: Phoenix Street Railway Map, 1928

2.2 The Demise of The Trolley System

By 1930, the unprofitability of the streetcar and its parallel bus lines accelerated due to the Great Depression, which reduced economic activity. The most unprofitable lines began to shut down slowly through the 1930s and 1940s as ridership fell and maintenance costs rose. However, the system managed to stay alive on its core routes, specifically Washington Street, as the line was flanked by dense development. Unfortunately, on October 9, 1947, a fire of still unknown origin destroyed the Seventh Avenue car barn, eliminating the majority of the trolley fleet. The City of Phoenix opted to take the loss and made little attempt to replace the destroyed rolling stock. With only six cars left, the Phoenix Street Railway operated until February 1st, 1948, when the Washington Street Line ultimately shut down. (Phoenix Trolley Museum, phxtrolley.org; DTPHX, "Then and Now: From Downtown's Mule-Drawn Trolley to Light Rail," dtphx.org). The surviving streetcars were sold off, and the tracks that existed for 60 years were paved over. Arguably, the Phoenix Street Railway did not fail; it faced weak funding, economic hardship, and a devastating fire.

When the Phoenix Street Railway shut down in 1948, Phoenix lost a reliable transit option, human-scale land use patterns, and the civic capacity to expand and operate rail. The most desired neighborhoods in the city for walkability, like Roosevelt Row, are the only physical evidence of what streetcar development was like for the city. (Historic Phoenix Districts, historicphoenixdistricts.com). These relatively small corridors are now surrounded by neighborhoods where car ownership is a must. Every future attempt to reintroduce rail transit in Phoenix would not only require reconstructing the track but also modifying legislation, financial models, construction practices, and ridership habits.

III. Automotive Dominance

3.1 Phoenix's Post-War Transit Failure

After the trolley ended, the City of Phoenix opted to base its entire transit system on bus service. The bus network was operated by Phoenix Transit, a publicly owned system that continued to expand routes as the city grew outward. Between 1950 and 1970, Phoenix grew from 107,000 to 580,000 people, and its land area expanded from 17 to 190 square miles (Macrotrends, macrotrends.net). Routes were planned into new master plan neighborhoods and subdivisions as they were built, following sparse growth rather than concentrating it. Due to chronic underfunding in the 1960s and 1970s, service became infrequent on most lines while

ridership remained modest. By the 1980s, Phoenix Transit became a service for those who could not afford a car rather than a competitive alternative.

Other Sun Belt cities saw a similar pattern to Phoenix, postwar populations migrated to car-oriented suburbs while bus systems struggled to expand outward. However, Phoenix stands alone in speed and scale of suburban expansion. By 1980, Phoenix had grown to the ninth-largest city in the nation (Macrotrends, macrotrends.net), while land-use patterns had completely diverged from those of the streetcar-era city. The rapid growth and shift in residential concentration led to a cratering of population density. As a result, the performance of transit in the region began to slip away from financial relevance and convenience. Over time, the automobile came to dominate every other mode of transportation in The Valley.

3.2 The Zoning, Parking, and Automotive Feedback Loop

By 1930, Phoenix had developed its first comprehensive zoning ordinance, establishing single-family residential and commercial districts (Historic Phoenix Districts, historicphoenixdistricts.com). Initially proposed to stabilize property values and maintain quieter residential areas, the zoning code opened the door to car-focused planning. When the automobile became dominant in the mid-20th century, Phoenix introduced parking minimums in Section 702-C of the City of Phoenix Zoning Ordinance. The original goal of these parking minimums was to reduce on-road congestion by moving parking off the street. Now, Section 702-C contains parking minimums tied to many, and often arbitrary, functions of a lot. Some examples include two spaces per cart at a go-kart track, with one space per 60 square feet; 15 spaces per field at sports complexes; and one space per 35 storage units, plus two spaces per mini warehouse (City of Phoenix, Zoning Ordinance §702, phoenix.municipal.codes/ZO/702).

The parking minimums created a major shift in development patterns for the greater Phoenix Area. Figures 4 and 5 below show the Arizona Capitol building and the surrounding neighborhoods in 1930 and 1979, respectively. The 1930 aerial was developed before parking minimums were implemented, allowing for dense single and multifamily development over entire blocks. Along the trolley corridor on the northeast corner of the Capitol, there is mixed-use commercial development. By 1979, parking minimums had been in effect for nearly two decades, creating a sea of parking lots where homes and businesses once stood. Every new housing development or business required lots that were significantly larger than the buildings themselves. Outside of parking, strict zoning requirements separated commercial and

residential development and created long street setbacks. The Chapter 6 district assignments of the Phoenix Zoning Ordinance established eight forms of single-family housing and segregated commercial corridors (City of Phoenix, Chapter 6 Residential Zoning Districts, phoenix.gov).

As a consequence, housing was built less densely, with large setbacks, and away from city centers. Meanwhile, commercial development was forced to build a sea of parking lots around relatively small store spaces set far away from residents. The dynamic between zoning and parking requirements is critical to understanding the effectiveness of transportation modes. Parking minimums allocate a large portion of a lot's usable land solely to car storage, thereby reducing population density and the number of people near transit stops. Strict, segregated zoning increased the distance between customers and businesses, requiring residents to travel further for goods and services. Lower residential density, along with forcing people to travel further, reduces the number of potential riders, weakening transit's financial prospects and increasing the need for a car (Manville et al., Parking Requirements and Affordability, Cities 2018, sciencedirect.com).

The parking and zoning standards created in the 1950s and 1960s did more than convenience the automobile; they made it a region-wide mandate. For decades, parcels developed under Phoenix’s mid-century standards produced a built environment that suited car travel. Origins and destinations are far apart, separated by an ocean of surface lots, long setbacks, and low density. The life cycle of these projects spans decades, creating a long-standing legacy of car-focused development. Reforming these standards requires more than modifying the city ordinances and passing laws. Reversing past decisions to improve has to overcome existing financial, physical, and political momentum that assumes universal car ownership. The failure of transit through the city’s history was inevitable due to the regulatory practices laid in place.

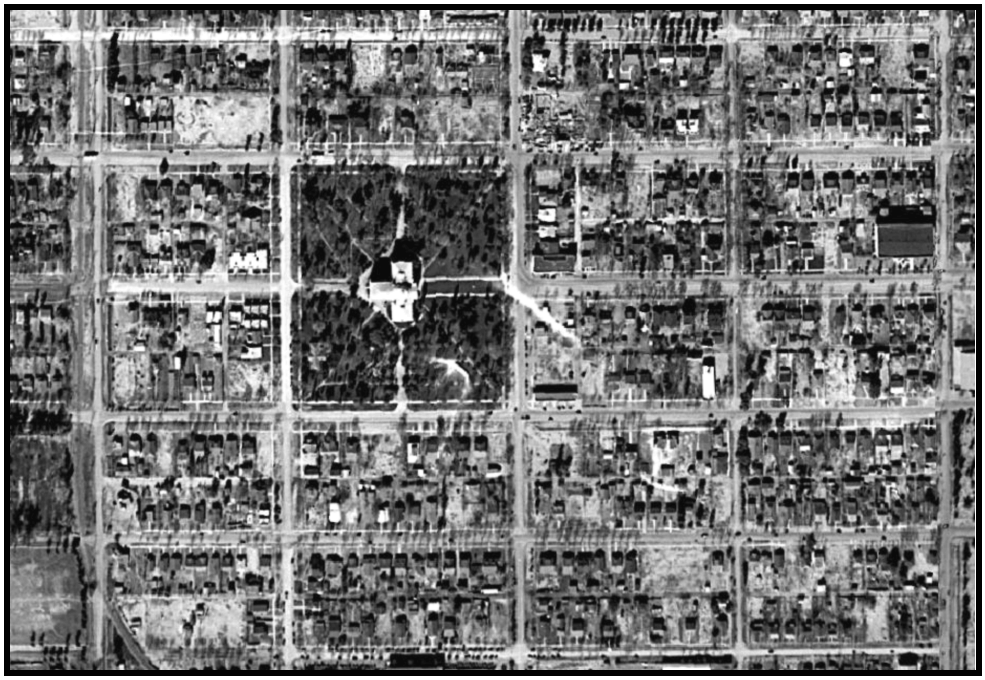


Figure 4: Arizona Capitol, 1930

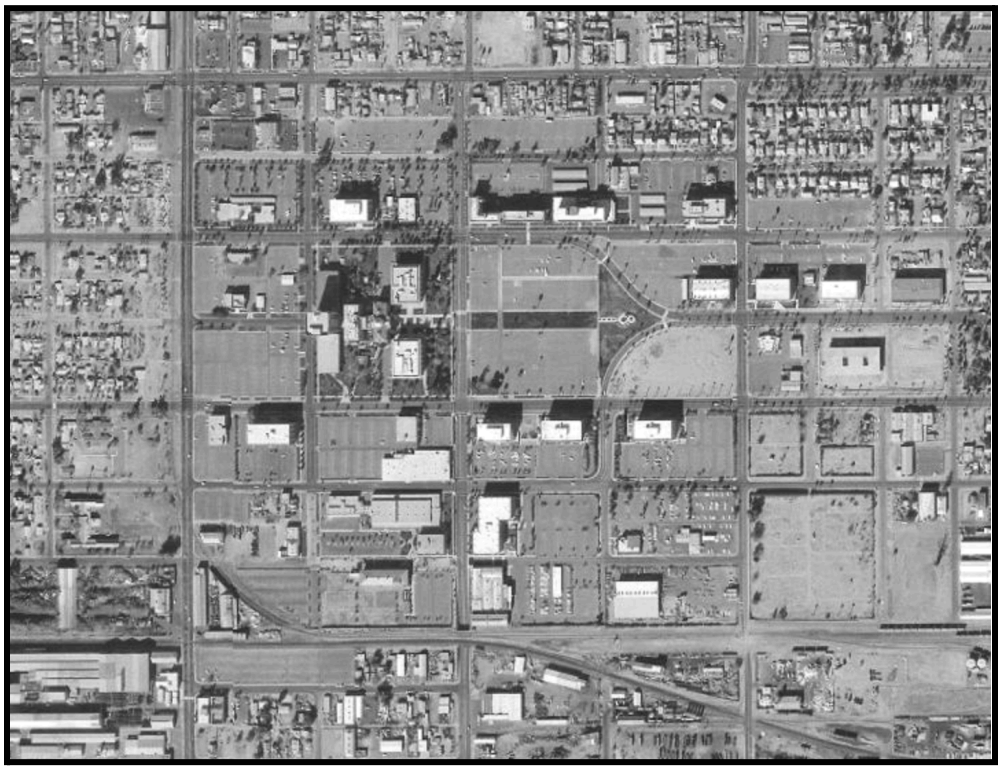


Figure 5: Arizona Capitol, 1979

IV. Roads, Highways, and Arizona's Delayed Entry

4.1 Arizona's Early Roads

As a territory, Arizona had constructed roads through individual counties and cities, resulting in a decentralized patchwork of dirt streets that catered to local needs. First, the territory attempted to implement toll roads, which were quickly phased out in favor of funding from the Territory Legislature. The federal government halted the Territory Legislature's funding stream as statehood had not yet been established. So, in 1909, a Territorial Engineer was appointed, who established an early highway system with two roads. With statehood in 1912, the Arizona Highway Department was formed to build on the territorial foundation. (Pry and Anderson, *Arizona Transportation History*, FHWA-AZ-11-660, 2011, p. 27).

With statehood, Arizona received critical federal aid to develop the highway system. Arizona's Good Roads Movement of the 1910s and 1920s lobbied for federal funding, which led to the 1920s Seven Percent system. The Seven Percent system allowed states to designate 7% of their highway systems as part of the federal network, allowing them to receive additional funds. Even with the Seven Percent system, construction was constrained by Depression-era funding gaps, partially alleviated by the New Deal (Pry and Anderson, p. 47). In 1927, a special session of the state legislature reorganized the Arizona Highway Department and created the Arizona Highway Code. The retooling provided a robust statutory framework, but the state highway system remained underdeveloped through the 1940s, given the state's size and a post-war population boom. The first major form of federal intervention came with the Federal-Aid Highway Act of 1956, which established the Interstate Highway System. In Arizona, the four-decade-long funding gap disappeared, and a construction boom began. Arizona's first freeways were built in the late 1950s, with the state's first interchange, shown in Figure 6, opening in 1957 (Arizona State Library, ADOT Agency History, azlibrary.gov/agency-history/2114).

Figure 6: I-17 & Grand Avenue, 1957

4.2 The Controversial Creation of the Modern Freeway Network

The introduction of the interstate system provided an initial skeleton for Phoenix's future freeway network. Where the city would decide to expand its highways became a technical and political puzzle. Arguably, the most contested section was the Papago Freeway, part of the I-10 that plowed through Central Phoenix. The original proposal called for a massive elevated structure through the Kenilworth Neighborhood; voters rejected it in 1973. The eventual solution was to run the freeway at grade, then below grade once it entered north of downtown. Part of the Papago Freeway ran through the Deck Park Tunnel, which has a twelve-acre park on top. The construction of the Papago Freeway displaced thousands of residents in the Kenilworth, Garfield, and Roosevelt neighborhoods. Figure 7 shows the original Kenilworth neighborhood in 1969, the demolition of homes in 1976, and the completion of the Papago Freeway in 1991 (AZ Central, *Interstates Displaced Thousands in Phoenix, the Consequences are Long Lasting)*.

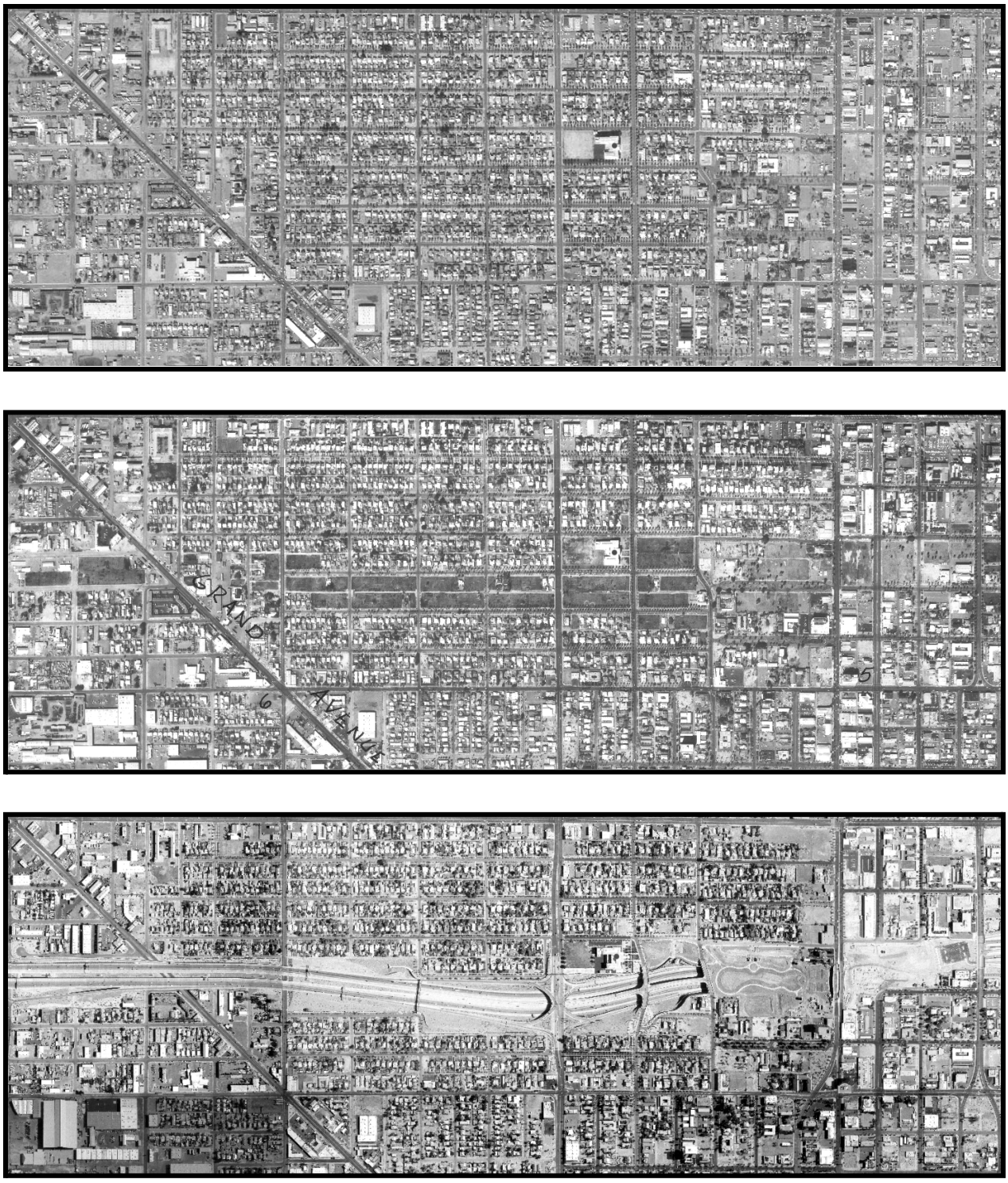


Figure 7: Kenilworth Neighborhood, 1969, 1976, & 1991

Despite the controversies surrounding the destruction of homes for the I-10, Maricopa County remained largely in favor of freeway construction. The county saw a 55% population increase from 1970 to 1980, from 971,000 to 1.5 million residents. The county opted to review the Freeway and Expressway plan in 1983 and determined that capacity must expand outside of the interstates (Pry and Andersen, FHWA-AZ-11-660, 2011). Frustrated with worsening traffic caused by zoning, interstate construction, and population booms, etc. ADOT, MAG, and the Phoenix Chamber of Commerce developed a new funding mechanism. Proposition 300 was a half-cent sales tax dedicated purely to freeway construction. It was passed with 72% support in October 1985 and created one of the largest highway construction programs in the country. The tax was designed to run for 20 years and was estimated to raise $5.8 billion for the Regional Area Road Fund, run by ADOT. Only $3.8 billion was realized. The projects funded under Proposition 300 included the Pima Freeway (Loop 101), Price Freeway (Loop 101), Agua Fria Freeway (Loop 101), Red Mountain Freeway (Loop 202), and Santan Freeway (Loop 202) (FHWA, Loop 202 Case Study, fhwa.gov).

Despite the construction boom, the program encountered significant setbacks. The revenue shortfall, combined with increases in right-of-way costs, led to a funding gap in the late 1980s and early 1990s. In 1994, MAG turned to voters with two more tax increases, but voters shot down both attempts. In 1995, ADOT responded by reducing the planned scope and implementing cost-cutting measures. In 2004, voters approved Proposition 400, a half-cent tax that dedicated 56% of funds to freeways, 10% to arterial roads, and 30% to public transportation. With new funding, the freeway network is still expanding with the Loop 202 South Mountain extension and SR 30 (Pry and Anderson, *Arizona Transportation History*, FHWA-AZ-11-660, 2011, p. 79 & FHWA, Loop 202 South Mountain Freeway Case Study, fhwa.gov).

4.3 The Legislative Legacy

In 1973, the Arizona Legislature consolidated the Aeronautics Department and the Highway Department into modern ADOT. The new Arizona Department of Transportation inherited the highway division's federal partnerships, budget priorities, and organizational culture (Pry and Anderson, p.137). The founding statute reads that the department "shall provide for an integrated and balanced state transportation system" (A.R.S. 28-331, azleg.gov) and asserts control of "state highways, state routes, state-owned airports and state-owned transportation

systems or modes” (A.R.S. 28-332). For public transit, ADOT is limited through A.R.S. 28-367 to coordinating and funding local providers; it has no right to build statewide passenger rail. Significant revenue streams inherently came from fuel taxes, vehicle registration, and license taxes, which increased with automobile usage. The state's political landscape became clear in 2024, when Senate Bill 1184, the ADOT reauthorization bill, included prohibitions on rail investment. These legal guards include a ban on accepting federal funds for commuter rail and restrictions on plans to reduce vehicle mileage. SB1184 passed the Arizona Senate with a 17-11 majority before failing in the House Transportation and Infrastructure Committee 5-5. ADOT eventually received authorization without the commuter rail ban, but SB1184 nearly made it through the State House and Senate.

The freeway network built from 1957 to 1991 was not the only option presented to the state. The 1973 rejection of the elevated Papago Freeway shows voters had leverage in large-scale transportation planning. Until 1985, when voters approved Propositions 300 and 400, allowing for forty continuous years of institutional hardening. The billions poured in from the half-cent sales tax created a freeway ecosystem with established contractors, guidelines, and political capital. By 1994, when MAG failed to pass two tax proposals to cover cost overruns, voters were clearly frustrated with the program. However, the imaginations of lawmakers turned to fixing the freeway program rather than to alternative modes. By 2004, the freeway program had been part of Phoenix’s transportation culture for 50 years. So, voters passed Proposition 400 to keep expansion alive by adding transit funding. As it builds out, the network’s geography will determine where residential, industrial, and commercial development concentrates. Proven by the near passage of SB1184, Arizona created a political environment favoring highway-first institutional planning yet hostile to alternative modes.

V. ValTrans and Institutional Politics

5.1 Renewed Transit Interest

Part of Proposition 300, which passed in 1985, was the creation of the Regional Public Transportation Authority (RPTA). The legislation that authorized Proposition 300 had split the half-cent transportation tax into two ballot measures, one for freeways and one for mass transit. The freeway ballot was set for 1985, and the mass transit ballot for 1989, a political compromise at the time. Lawmakers who wanted additional freeway funding did not support any form of

transit measure, but compromised to pass Proposition 300. The 1989 transit vote became known as ValTrans (Phoenix New Times, *ValTrans Derailed*, 1989).

The proposal presented to Phoenix Metro's voters on March 28, 1989, was expansive. ValTrans would have been a 103-mile elevated heavy-rail system modeled after the Vancouver, BC, SkyTrain. The RPTA hired Larry Miller, the chief engineer, who had designed the SkyTrain to create the Phoenix System. The funding package included 1,500 new buses, a 23-mile commuter rail line between Chandler and Phoenix, and an additional $300 million in freeway improvements. The full program cost $8.5 billion and was to be funded by a half-cent sales tax over a 30-year lifespan. The ValTrans plan was one of the most ambitious transit plans in American history (Axios Phoenix, *How Phoenix-area voters delayed the adoption of light rail by nearly 20 years*, 2023, axios.com).

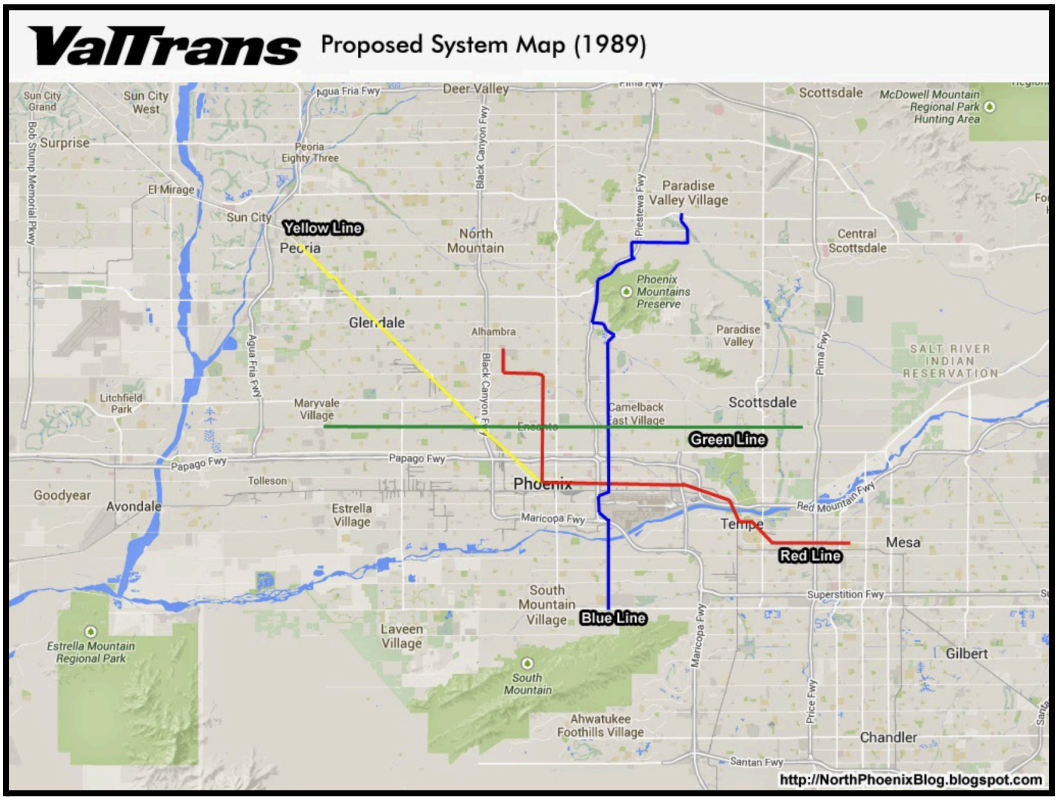


Figure 8: ValTrans Proposed Route Map, 1989

5.2 The Failure of ValTrans

Maricopa County voters overwhelmingly rejected the proposal by a full 2-to-1 margin. Only in Tempe, where traffic and urban form were top priorities, did the proposal win the majority. Concerns over cost, noise, and doubts over ridership projections led the opposition. While the opposition was loud, there was a wider problem: RPTA had never convincingly demonstrated that Phoenicians would leave their cars for transit. As reported in 1989, the RPTA planners had structured their case around statistics rather than holistic improvements. Statistics such as a projected 30-ton-per-day reduction in carbon emissions by 2020, a mere fraction of total emissions at the time (Phoenix New Times, 1989).

The problems ran deeper than a relatively weak campaign execution. At the time, Bill Meek, ValTrans's publicist, acknowledged that RPTA planners had started at the end and tried to invent the beginning. Meek said deciding on a Vancouver SkyTrain-like system and hiring someone to justify it, rather than building a case from demonstrated demand and political consensus, led to the project's failure. RPTA director Lyman Driggs later characterized the vote as a political rebellion against the 1985 freeway program itself. However, voters frustrated that freeway construction was behind schedule in 1989 were unwilling to extend the same half-cent sales tax to an ambitious transit program. The Proposition 300 freeway program had damaged the reputation of large transportation funding and the half-cent sales tax mechanism (East Valley Tribune, 2005).

5.3 The Aftermath and Path to Light Rail

Other, less ambitious transit referendums reached ballot measures in 1993 and 1997, but they were defeated (Valley Metro, 2021, valleymetro.org). Finally, in 2000, Phoenix voters approved the Transit 2000 Regional Transportation Plan, providing the framework for light rail. In 2004, Proposition 400 authorized 30% of the half-cent sales tax for public transportation (Ballotpedia, ballotpedia.org, ADOT, az.gov). The original 20-mile segment of Valley Metro's light rail opened in 2008, nearly 20 years after the failure of ValTrans. For over a decade, from 1989 to 2000, the Valley did not pause its extreme population growth. The city continued to expand outward, with no reliable mass transit, leading to car-dependent development as transit conditions worsened.

Former Phoenix Mayor Terry Goddard retrospectively said in an Axios Phoenix interview, “ValTrans was the one that got away. We lost 35 good years of developing around a different pattern” (Axios Phoenix 2023). The light rail system that opened in 2008, following the ValTrans red line, was designed to withstand the Valley’s political climate. While far better than no rail system, the tracks are at grade rather than elevated; planning and construction are completed in phases, and funding is provided for each phase rather than all at once across the network. The design choices reflect the institutional memory of 1989; they produced a system that was politically doable and operationally functional but plagued by limitations. The lack of a dedicated grade, commuter rail, or suburban reach traces back to the constraints that the ValTrans defeat imposed on every transit pursuit that followed.

VI. Modern Valley Metro

6.1 From ValTrans to VM Light Rail

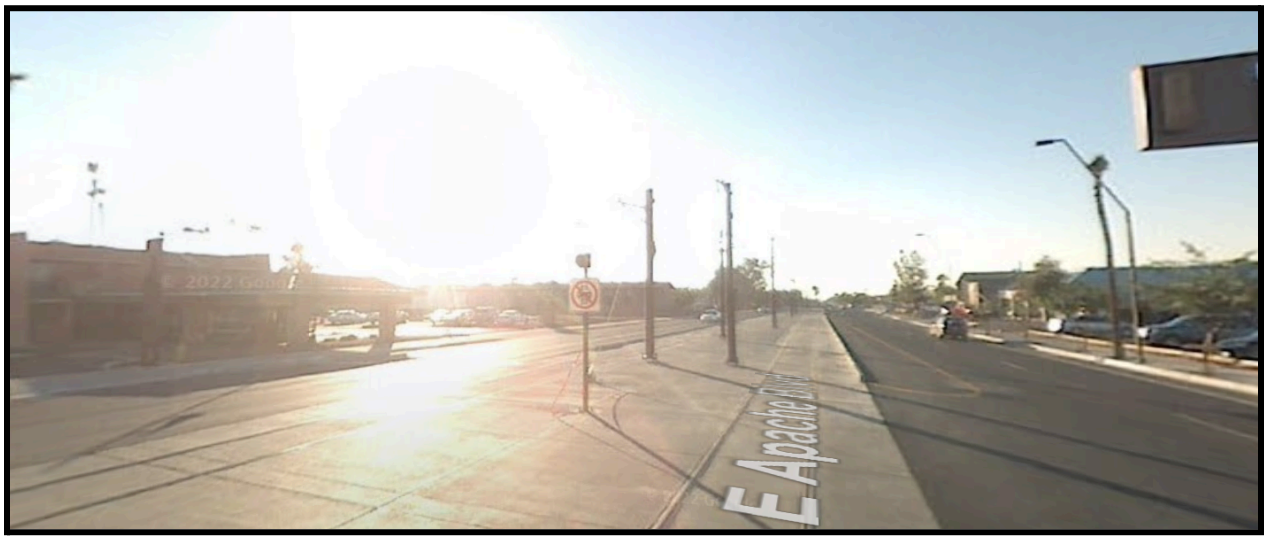
Valley Metro’s light rail system was built on a political foundation slowly assembled over the decade following ValTrans’ defeat. In 2000, 11 years after ValTrans, Phoenix voters approved the Transit 2000 Regional Transportation Plan. A 0.4% sales tax for 20 years, the proposal prioritized improving the bus system and laid the groundwork for light rail. The plan directly referenced technical work from ValTrans, adopting the same route color designations, development corridors, and rail alignments developed in the 1980s (Valley Metro, valleymetro.org). In 2004, Proposition 400 passed, designating additional funding for public transit through 2025. Both proposals provided the capital funding for the construction of the initial light rail segment. The initial 20-mile, 28-station segment ran from 19th Avenue south through downtown, east through Tempe, before terminating at Sycamore and Main Street in Mesa. The project opened on December 27th, 2008, on time and within its $1.4 billion budget, at around $70 million per mile (Valley Metro, System Fact Sheet, valleymetro.org). Ridership exceeded projections immediately, as weekly boardings reached 40,000, exceeding the projected 26,000. After 5 years, annual ridership on the initial 20-mile segment had topped 14 million passengers (AASHTO, Valley Metro Rail Phase 1 Case Study).

In August 2015, Phoenix voters approved Proposition 104, commonly known as Transportation 2050 (T2050), which replaced the Transit 2000 Regional Transportation Plan, which was to expire in 2020. Proposition 104 raised the 0.4% sales tax to 0.7% and extended it to 2051, a 35-year plan projected to generate $16.7 billion, with an additional $14.8 billion in

county, federal, and fare funding (City of Phoenix, Transportation 2050, phoenix.gov). The tax revenue is allocated as follows: 51% for bus service improvements, 35% for light rail construction and operation, and 14% for street-level upgrades. The plan aims to expand the light rail system by threefold, adding 42 miles to the network. Since its opening, Valley Metro's rail system has expanded six times as of 2026. These extensions include the Northwest Phase II Extension, opening in 2024, and the South Central Extension, opening in 2025. In 2026, the system covers 40.5 miles, has 49 stations, and serves 11 million riders annually.

6.2 A New Era of Development

Between 2005 and 2017, more than 300 development projects were in construction or completed along the Valley Metro Rail corridor. The line attracted $10.1 billion in investments, primarily from private sources, and generated an estimated 16,300 jobs (AASHTO, Valley Metro Phase 1 Case Study). The City of Phoenix's Reinvent PHX initiative began in 2012 in collaboration with ASU and the U.S. Department of Housing and Urban Development. The initiative produced Transit-Oriented Development (TOD) policy plans and a Walkable Urban Code for designated light rail districts (City of Phoenix, phoenix.gov). The plan was formally adopted in 2015, breaking down long-standing zoning codes to allow for multi-use, walkable, and dense development in rail-focused districts. Outside of Phoenix, the rail alignment has seen significant TOD in Tempe and Mesa, as demonstrated in Figure 9 near ASU.



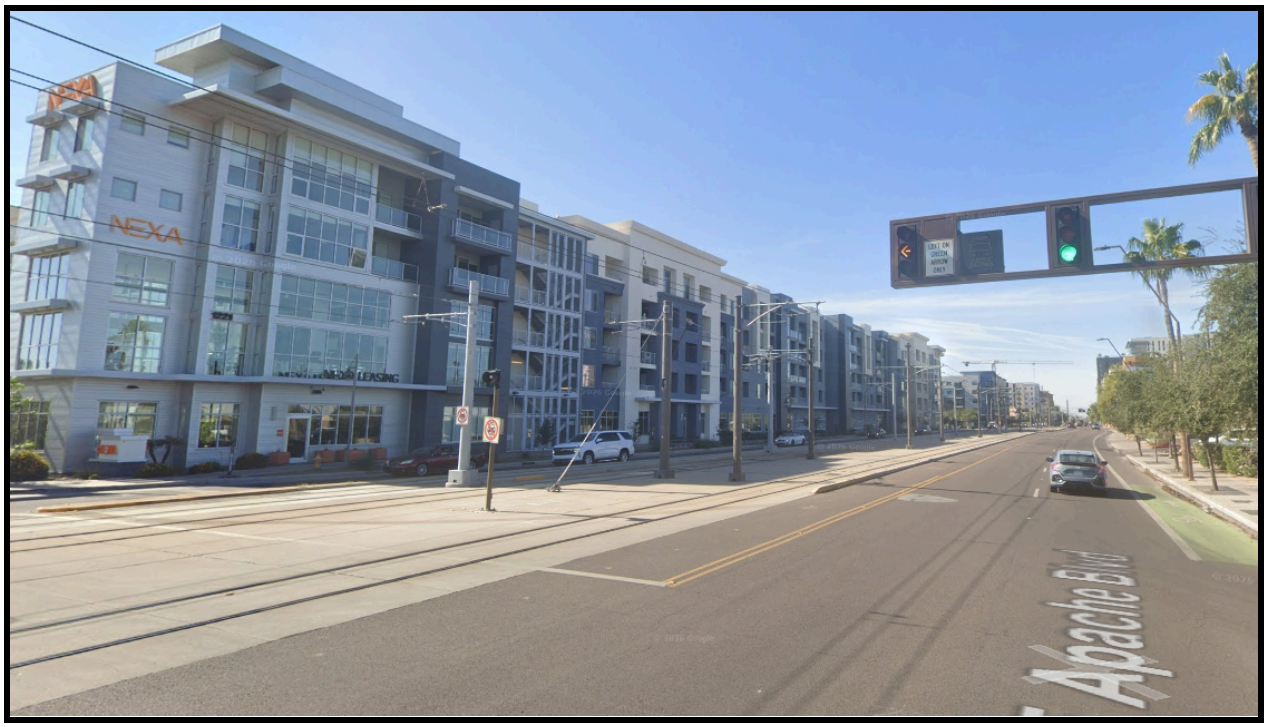


Figure 9: Apache Blvd & Dorsey Ln, 2007 & 2025

6.3 The Limitations of an Inherent Institution

The system's physical constraints trace directly to the conditions created by decades of auto-focused planning and development. While it has been successful in encouraging infill development, the rail system fails to reach the metro's booming population centers on its outskirts. Extending the rail line has seen success; the South Central Extension added 5.5 miles to a historically underserved community. However, extensions have been made difficult by a pattern of constant legislative intervention not seen in the highway sector. In August 2019, political opponents placed Proposition 105 on the ballot, an attempt to redirect funds away from rail. Voters rejected it by a margin of 62% to 38%. In 2023, when the County half-cent sales tax was set for reauthorization, the state Legislature attached a provision restricting any public funds from being used for light rail within a buffer zone around the State Capitol. The provision effectively blocked the voter-approved Capitol Extension, forcing Valley Metro to redesign the alignment three times. Additional bills introduced in subsequent sessions proposed expanding the buffer zone further while redirecting rail funds for autonomous vehicles. On January 27th, 2026, the Phoenix City Council voted 7-2 to kill the Capitol and I-10 West rail extensions. The city opted to redirect planning towards an Indian School Rd extension, forfeiting years of design

work and $1 billion in pending federal grants (KJZZ, kjzz.org, January 26, 2026). There have been no recent attempts at legislative intervention targeting highway expansion in The Valley. Proposition 300, the I-10 Broadway Curve, and successive expansions to the Loop system have proceeded without referendums, buffer zones, or bills to redirect funding.

Due to Phoenix's track record of developing around roadways, the political climate sees freeways as a necessity and rail as a choice. The T2050 vote and the 62-38 defeat of Proposition 105 show that Phoenix voters have changed politically since ValTrans failed in 1989. With the opening of the modern light rail and successive extensions, The Valley has seen a revival of walkable, sustainable development. However, with the cancellation of the Capitol and I-10 West extensions, both voter-approved and funded by federal assistance, rail remains hampered. Voter approval is not enough for transit when state legislative opposition can completely reshape its future. The collapse of the modern light rail extensions is evidence that the political contest over transportation is active and lopsided in favor of the status quo.

VII. The Fight for Regional/Commuter Rail

7.1 A Legacy of Proposals

The dream of connecting Arizona's most populous centers is far from a recent phenomenon. In February 1980, a series of Pacific storms triggered a historic flood on the Salt River, washing out all but three bridges, including the I-10. The two remaining major crossings experienced extremely long traffic jams, lasting up to 8 hours each day. To alleviate the crisis, ADOT coordinated emergency rail service with Amtrak. Nicknamed "Hattie B.," after the governor's wife, two diesel engines and five coaches ran from Phoenix Union Station through Tempe to Mesa's rail station. In the two weeks the train operated, February 25th to March 7th, 1980, the service carried 46,000 commuters. After the first week of service, ADOT was forced to add a sixth coach due to the unexpected demand for the line. Correspondence between advocates and Governor Babbiit to make the service permanent raised the possibility of commuter rail service. However, when the bridges reopened, Hattie B. was returned to Amtrak, and the service was seized after 10 days of operation (ADOT Blog, "40 Years Later, Hattie B. Chugs On," azdot.gov).

Figure 10: “Hattie B.” Crossing the Salt River, 1980

The trial run Hattie B. provided for the state showed that Phoenix residents would ride commuter rail if it existed. Nevertheless, plans for a permanent commuter rail did not emerge until 1989, with the ValTrans proposal. The proposal included a 23-mile line between Chandler and Downtown Phoenix, and its defeat shelved regional rail. In 1991, the Arizona Rail Passenger Association released its Arizona Rail Report, a document that introduced the idea of modern rail service in the Sun Corridor. The Sun Corridor runs from Tucson to Phoenix, the two most populous cities in the state. Arizona’s governance did not get formally involved again until 2008, when MAG released the Commuter Rail Strategic Plan. The plan identified four suitable freight corridors for passenger service with peak 30-minute headways (MAG, Commuter Rail Strategic Plan, azmag.gov, 2008). Neither proposal left the planning stage, received funding, or began construction. Arizona Proposition 203, a 2008 ballot measure that would have created a state fund for non-highway transportation, including passenger rail, failed that November due to dubious legal practices (Ballotpedia, ballotpedia.org). Between 2007 and 2011, ADOT's statewide planning initiative formally recommended introducing passenger rail. In March 2011,

the Arizona State Transportation Board unanimously adopted the first State Rail Plan, identifying the Phoenix–Tucson corridor as the highest state priority (Arizona PIRG, "Connecting Phoenix and Tucson," pirg.org).

In 2011, ADOT and the Federal Railroad Administration (FRA) initiated the Arizona Passenger Rail Corridor Study, a significant planning effort to introduce regional service. Over five years, ADOT produced a Service Development Plan (SDP) with an Environmental Impact Statement. In 2016, the FRA granted ADOT the ability to seek federal construction funding for the Sun Corridor. The service included three daily round-trip, 1.5-hour, Phoenix-Tucson routes, with intermediate stops at Sky Harbor Airport and Tempe. The plan outlined a projected positive benefit-cost return across all alternatives over thirty years (ADOT, APRCS SDP, p. 116). In 2018, MAG updated its Commuter Rail System Study, estimating capital costs of $2.566 billion for diesel multiple unit service across four proposed metro lines (MAG, 2018 Regional Commuter Rail System Study Update, azmag.gov, October 2018).

7.2 The Gap Between Planning and Construction

The existence of an FRA approval has not translated into any construction or funding mechanism. ADOT received a $500,000 federal Corridor Identification and Development Program grant in December 2023, supplemented by $3.5 million in state planning funds (Office of the Arizona Governor, azgovernor.gov, December 2023). In June 2025, the FRA approved ADOT's Step 1 work plan, a process expected to require two to three additional years before preliminary engineering can begin (ADOT, Phoenix–Tucson Intercity Passenger Rail Corridor Study, azdot.gov). However, no dedicated state funding mechanism equivalent to the T2050 sales tax has been established for passenger rail. In 2024, SB1184 proposed to bar ADOT from accepting any federal rail funds; it passed the Arizona Senate 17-11 before failing in the House 5-5 (Arizona Capitol Times, azcapitoltimes.com, February 2024).

The Hattie B. demonstrated in 1980 that commuter rail could work in Phoenix. The 1989 ValTrans commuter rail component, the 1991 Arizona Rail Passenger Association report, the 2008 MAG Strategic Plan, the 2008 Proposition 203 failure, the 2011 State Rail Plan, the 2016 FRA Record of Decision, and the 2018 MAG update represent four decades of proposals that ultimately stalled. Each planning cycle produced better documentation and stronger federal alignment, yet each time, the absence of a dedicated state funding mechanism and a durable political commitment prevented regional rail’s emergence.

VIII. The Emergence and Collapse of Intercity Rail

8.1 Phoenix's Entry to the Transcontinental Rail Network

From the very beginning, Phoenix's relationship with intercity rail has been conditional. The Southern Pacific Railroad completed the Sunset Route across Arizona in the 1870s, with no connection to the Valley, as Phoenix was too insignificant and remote to justify a direct connection. The first rail connection was a spur line connecting Phoenix to Maricopa, 35 miles south. For four decades, the only access to intercity rail was through the spur line and a transfer in Maricopa. Phoenix evolved from a remote town to the territorial capital without the transcontinental railroad. The need for a direct connection became clear as the city boomed in the 1920s, leading to the construction of Union Station (Pry and Andersen, FHWA-AZ-11-660, 2011; Arizona Historical Society, Railways of Arizona, arizonahistoricalsociety.com).

Still standing today, Phoenix Union Station was a joint venture between Southern Pacific and Santa Fe, commissioned in 1922. The Arizona Corporation Commission ordered the two railroads to consolidate downtown, and the building was completed in 1923. Completed in a Mission Revival Style, Phoenix Union cost $556,000 and was dedicated as a monument to The Valley's prosperity. With Phoenix Union Station completed, Southern Pacific completed its Northern Main Line, running from Pichaco Junction through Collidge, Chandler, Mesa, Tempe, and Phoenix westward toward Yuma. The line opened on November 15th, 1926, and was the Valley's first direct connection to the nationwide rail network. At its peak, Phoenix Union saw up to 18 trains a day running Southern Pacific's Californian, Golden State, and Sunset Limited routes, along with Santa Fe's Hassayampa Flyer (Phoenix Historical Building Survey, 1970, NRHP no. 85003056).

8.2 The Dramatic Decline

The Federal Highway Act of 1956 and the systematic investment in highways across all levels of government led to the decline of rail across the American West. Arizona's first highway boom, from 1943 to 1973, correlated with declining railway ridership. By 1969, the Sunset Limited had been reduced to three trains per week through Phoenix. On May 1st, 1971, Amtrak assumed control of the passenger service and Union Station, and modest improvements began, but the rail's role had changed dramatically (Pry and Andersen, FHWA-AZ-11-660, 2011).

The decisive blow to intercity rail's role in Phoenix came on October 9th, 1995, when domestic terrorists intentionally derailed the Sunset Limited. Loosely connected to the Waco Cult, the derailment near Palo Verde, AZ, remains an unsolved crime. The west-of-Phoenix branch, known as the Wellton Branch, had been eyed by Union Pacific for decommissioning for years due to low freight demand. The Department of Energy kept the line afloat with shipments of spent nuclear fuel, but with the attack, the line was deemed a security risk. Amtrak was the sole remaining customer on the branch; Union Pacific demanded that they fund repairs to the tracks. Amtrak turned to the state of Arizona, which refused to foot the bill. On June 2nd, 1996, the Sunset Limited was rerouted south through Maricopa and Tucson, bypassing Phoenix entirely. Phoenix Union Station was sold and repurposed into a telecommunications switching hub soon after (KJZZ, kjzz.org, September 23, 2019, ADOT, APRCS SDP, azdot.gov, June 2017, p. 9)

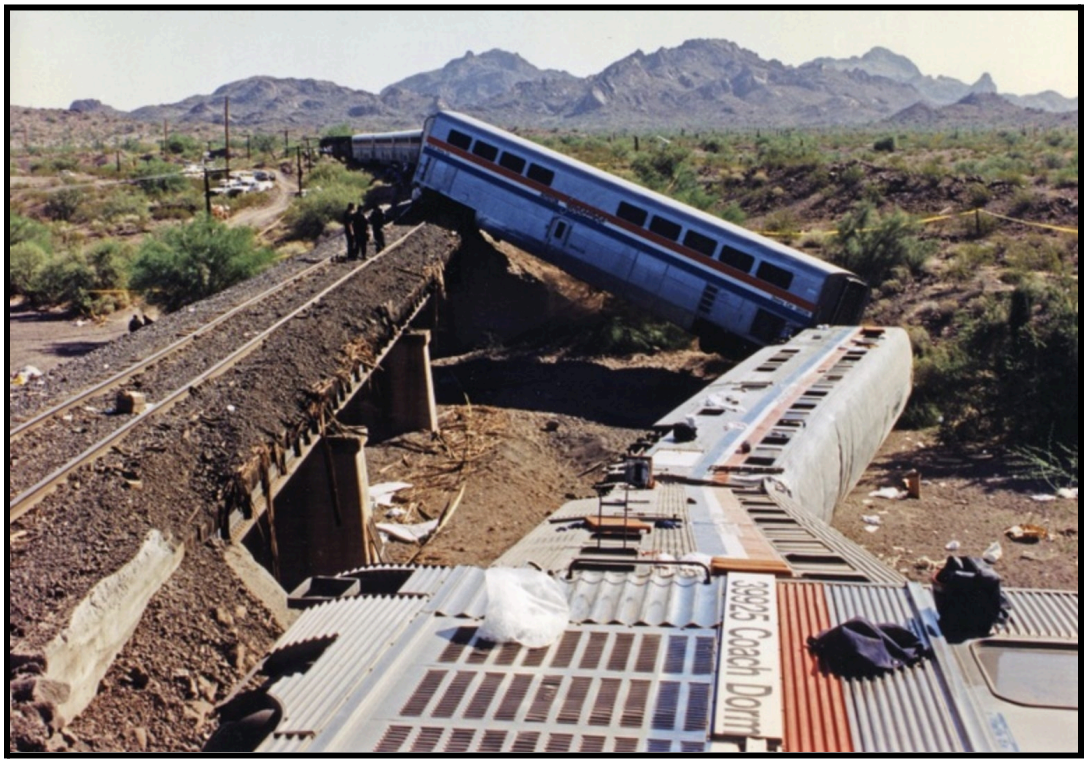


Figure 10: Sunset Limited Derailment, 1995

8.3 Phoenix's Remaining Connection

Harking back to intercity rail's start in Arizona, the Maricopa station became the Phoenix-designated Amtrak stop. Until 2017, there was no Amtrak-run shuttle or bus service; those wanting to ride Amtrak were forced to take a private taxi or drive south (ADOT, APRCS

SDP, p. 9). The physical infrastructure that enabled the service has not been removed. In 2014, ADOT commissioned a Wellton Branch Railroad Rehabilitation Study to assess the condition of the 90.8-mile corridor between Arlington and Wellton and to develop capital cost estimates for freight and passenger rehabilitation. The study identified four improvement scenarios ranging from basic freight restoration at $165 million to higher-speed passenger service at $420 million. It concluded that freight demand at the time did not warrant reopening, but noted that rehabilitation remained feasible if demand increased (ADOT, Wellton Branch Railroad Rehabilitation Study, azdot.gov, 2014).

The decision to axe passenger service at Phoenix Union was a state funding decision, not a market one. Decades of underinvestment from Southern Pacific, a collapse in freight traffic, and a domestic terrorist attack ended passenger rail. Phoenix, the nation's fifth-largest city, lost direct national passenger service for 30 years. The state's refusal to fund repairs came during the Proposition 300 freeway blitz; a railway restoration would have been a fraction of the loop system's funding. A half-century of automotive planning and development created a political climate unwilling to fund other modes (ADOT, APRCS SDP, azdot.gov, 2017).

IX. Conclusion: The Weight of the Past

9.1 The Key Points to Modern Phoenix

Six significant moments in Phoenix's transportation history have shaped today's ecosystem. In 1948, the removal of the streetcar network deprived urban rail of reliable infrastructure and institutional capacity. Throughout the 1950s and 1960s, parking minimums and auto-focused zoning codes reorganized the region's regulatory framework around the assumption of car ownership. An assumption that made transit economically unviable at the neighborhood scale due to declining population density. In 1985, Proposition 300 kick-started significant highway investment with a dedicated funding system, contractor ecosystem, and political momentum. In 1989, the failure of ValTrans proved that transit had to meet a standard higher than that of other modes of infrastructure. The state's refusal to fund repairs to the Wellton Branch in 1996 severed Phoenix's connection to the national passenger rail network. Last, across four decades of proposals from 1980 on, the absence of a dedicated state funding system has prevented the development of regional and commuter rail networks. Phoenix's transportation turning points were not inevitable; governmental decisions and their consequences shaped them. Path dependency does not mean that no alternatives existed; it

means that at each critical point, the choice made narrowed the future range of options. Modern Phoenix is not the product of a master plan; it has accumulated from decisions that were made, making it more difficult to achieve.

9.2 A Region in Transition

The story of Phoenix shows the creation of a rigid, auto-focused transportation system, but it also points towards a region in transition. Political hostility has decreased since the failure of ValTrans in 1989. Proposition 104 in 2015 passed by 55%, and Proposition 105, which sought to undo it, failed by 62% in 2019. Proposition 479 passed in 2024 with a 60% margin, extending the regional transportation tax to 2045 and allocating 37% of funds to transit. (Maricopa County Elections Department, 2024 Publicity Pamphlet, elections.maricopa.gov; Ballotpedia, ballotpedia.org). Phoenix residents approved the city's updated General Plan in November 2024 with nearly 80 percent support, affirming a growth vision organized around transit connectivity and infill development (City of Phoenix, General Plan 2025, phoenix.gov). The South Central Extension opened in June 2025, extending light rail from Central Avenue to Baseline Road, serving one of the metro's most underserved communities. The FRA approved ADOT's work plan for a new Phoenix-Tucson Service Development Plan in June 2025, re-entering the federal planning process after a decade of stalled momentum (ADOT, azdot.gov). Changes to dated zoning laws are emerging through the Reinvent PHX review and the reduction in parking minimums, enabling walkability near transit. The light rail, which opened in 2008 with 20 miles and 28 stations, now covers 40.5 miles and 49 stations, with an annual ridership of 11.1 million.

9.3 The Resistance to Change

The asymmetry documented through the city’s history has not yet been resolved. Expansions to the state freeway system have been under construction continuously due to ADOT’s refinements in securing funding. Expansions to transit have stalled due to voter suppression, federal funding competition, state legislature interference, and coordination between nineteen local municipalities. The Capitol and I-10 West Extensions, which were voter-approved, received federal funds and were deep into design when they were canceled due to legislative opposition. The Indian School Road corridor that will replace it faces the same structural conditions, with a projected opening approximately eleven years away and no federal

funding application yet filed (North Central News, northcentralnews.net, March 2, 2026). Intercity rail remains unconnected to The Valley, as Phoenix remains the largest city in the US without direct rail service. ADOT's freeway program, by contrast, launched its first round of Proposition 479-funded projects in early 2026, with a $129 million widening of Loop 303 (ADOT, azdot.gov, December 29, 2025). This is not a coincidence; it is the operational expression of fifty years of institutional design. An agency whose revenue streams, contractor relationships, organizational culture, and political alliances are aligned with highway delivery. The path is not fixed, but the weight of the past is heavy; it has been lifted before.

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