

LIBERTY BRIDGE
Pennsylvania Historic Bridges Recording Project
Spanning Monongahela River at State Rt. 3069
Pittsburgh
Allegheny County
Pennsylvania

HAER No. PA-448

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LIBERTY BRIDGE

HAER No. PA-448

Location: Spanning Monongahela River, E. Carson St., and Second Ave. at State Rt. 3069, Pittsburgh, Allegheny County, Pennsylvania.

USGS Quadrangle: Pittsburgh East, Pennsylvania (7.5-minute series, 1993).

UTM Coordinates: 17/585150/4478380

Dates of Construction: 1925-28.

Designers: Allegheny County Department of Public Works: Vernon R. Covell, chief bridge engineer; George S. Richardson, design engineer.

Builders: Dravo Contracting Company and Vang Construction Company, substructure; Independent Bridge Company, superstructure.

Present Owner: Pennsylvania Department of Transportation.

Present Use: Vehicular bridge.

Significance: This 2,663'-0", sixteen-span, \$3.7 million Pratt deck truss bridge was the longest and most expensive bridge built in Allegheny County when it was completed in 1928. The bridge features two 450'-0" cantilevered main spans with suspended sections over the Monongahela River and deck girder approach spans on either side. The bridge links Pittsburgh's downtown area with the Liberty Tunnels, built through Mt. Washington in 1924. The opening of the tunnels and the bridge were instrumental in the development of Pittsburgh's South Hills suburbs. The Liberty Bridge was listed in the National Register of Historic Places in 1988.

Historian: J. Philip Gruen, August 1997.

Project Information: This bridge was documented by the Historic American Engineering Record (HAER) as part of the Pennsylvania Historic Bridges Recording Project - I, co-sponsored by the Pennsylvania Department of Transportation (PennDOT) and the Pennsylvania Historical and Museum Commission during the summer of 1997. The project was supervised by Eric DeLony, Chief of HAER.

The city of Pittsburgh is noted for its phenomenal collection of bridges. These bridges, spanning the Allegheny, Monongahela, and Ohio rivers, have not only been instrumental in stimulating and maintaining Pittsburgh's growth, but their intricate steelwork has contributed to the city's image as an industrial metropolis where the steel industry reigned and coke was king.¹

This image is created largely by the total ensemble of bridges. Because so many of them today resemble one another in appearance, only a handful — particularly Gustav Lindenthal's Smithfield Street Bridge (1883) — actually stand out.²

Not far to the north of the Smithfield Street Bridge is the Liberty Bridge, little noted today for its engineering significance, less dramatic than some of its neighbors, and hardly noticed by motorists who cannot see the cantilevered deck truss supporting it. Motorists often consider the bridge little more than a conduit transporting them into the Liberty Tunnels toward their bedroom communities in the South Hills.

Yet, as a connection to the South Hills, the Liberty Bridge is enormously important and has had a significant impact on the development of the Pittsburgh metropolitan area. The 2,663'-0"-long, sixteen-span bridge, completed in 1928, helped open up Pittsburgh's sparsely populated South Hills area to extensive development. While settlement and development of the South Hills had begun before the construction of the Liberty Bridge and Liberty Tunnels, the area's development dramatically accelerated once these structures made it easily accessible by automobile. Immediate growth occurred in the old trolley suburbs of Mt. Lebanon, Dormont, and Brookline, whose residents had encouraged the bridge's construction. But the convenient automobile access from the South Hills to downtown ultimately pushed development further out to areas that are examples of early American automobile suburbia: West Mifflin, Pleasant Hills, Bethel Park, and Upper St. Clair.³ Many relics from this early phase of suburban automobile America are still in use today.

It is pointless to debate whether the bridge or the tunnel had a greater impact upon the area's development. Both certainly played a part, and the story of one cannot be properly told without that of the other. Considering that many elements of suburban America today (shopping centers, cul-de-sacs, mass-produced homes, and a cloverleaf traffic interchange) were built in the

¹ Pittsburgh's steel industry had virtually disappeared by 1997, when this essay was written.

² This was not always the case. For example, for much of the late nineteenth and early twentieth centuries, where the essentially similar Fort Pitt and Fort Duquesne Bridges span the Monongahela and the Allegheny today, were the Point Bridge (a suspension bridge) and the Union Bridge (a wooden covered span). See also U.S. Department of the Interior, Historic American Engineering Record (HAER) No. PA-2, "Smithfield Street Bridge," 1974, Prints and Photographs Division, Library of Congress, Washington, D.C.

³ It is difficult to determine what was America's "first" automobile suburb, although the Bronx River Parkway opened up development in Westchester and Nassau Counties in New York as early as 1921. Philadelphia's Delaware River (now Benjamin Franklin) Bridge, completed in 1926, opened up the New Jersey side as an extension of Philadelphia, and New York's Holland Tunnel (1927) opened up New Jersey's northeastern shore. See U.S. Department of the Interior, HAER No. NY-161, "Holland Tunnel," 1987, Prints and Photographs Division, Library of Congress, Washington, D.C.

South Hills as early as the late 1920s and '30s, the development of this area is one of the most interesting stories that followed construction of the Liberty Bridge. While the completion of the bridge had an immediate effect on the lessening of traffic problems throughout the city, its far-reaching influence in terms of suburban development has arguably been the bridge's most significant contribution to the Pittsburgh area.⁴

The Liberty Bridge, however, does not lack engineering significance or an important place in American bridge building history. In 1928, the bridge was the largest, highest, and most expensive bridge built in Allegheny County. Its 420'-0" main spans are not only extraordinarily long, but are cantilevered from stately concrete piers resting on concrete footings encased in stone. The bridge's construction included a complex approach system on the north side which lifted the bridge above Second Street and the tracks of the Baltimore and Ohio Railroad, with a central ramp that passed underneath the Boulevard of the Allies and connected with Forbes Street. Ramps were added later to link the Boulevard of the Allies directly to the bridge. When the bridge was completed in 1928, a traffic circle with a commemorative monument articulated the southern approach, and a decorative wrought-iron railing with shell motifs and wrought-iron lighting fixtures adomed the roadway's length.

Nevertheless, it has either been the view *from* the Liberty Bridge to other bridges and to Pittsburgh's downtown skyline, or the processional experience from the city into the tunnels, that has largely colored motorists' impressions of the bridge over the years. By the late 1920s, Pittsburgh's downtown area, riding on the strength of its booming steel industry, featured a compact and distinct downtown district of new high-rise buildings. The city already had numerous bridges spanning its rivers; in fact, the construction of bridges in Pittsburgh has been a vital and constant part of its history. Since 1820, when the first span across the Monongahela River was constructed at the site of the present-day Smithfield Street Bridge, 376 bridges had been built in Allegheny County and "hundreds of others" in the Pittsburgh area.⁵

Even with numerous bridges already spanning the Monongahela River in the 1910s, including the South Tenth Street Bridge not far north of the Liberty Bridge's proposed site, there was still no convenient automobile access from the edge of the downtown district to the South Hills. The only access to the South Hills by automobile was via the circuitous Brownsville and South Sixteenth Street roads winding up and around Mt. Washington. This spurred residents of the South Hills, in the late 1900s, to suggest the construction of a bridge and tunnel from Pittsburgh's downtown area directly into the South Hills.

⁴ Today, traffic is regularly backed up along the bridge during rush hour.

⁵ "The Opening of the Liberty Bridge," *Fort Pitt Pointers* (1 Apr. 1928), vertical files, Allegheny County Office of Records Administration, Pittsburgh, Pa.

Early Plans

The lack of access to the South Hills and numerous other infrastructure problems encouraged the Pittsburgh Committee on City Planning in 1901 to hire Frederick Law Olmsted to draft a report on possible civic thoroughfare improvements. Olmsted's 165-page report, among a variety of other things, recommended a new "fast-moving" road along the waterfront (later built as the Boulevard of the Allies) and a bridge-and-tunnel scheme connecting to the South Hills. While the report pondered the possibility of another hillside road, Olmsted recommended the bridge-and-tunnel plan because it provided the most direct access to the South Hills area. He noted the importance of settling the "sparsely populated" South Hills, for it was largely free from pollution yet still quite close to the business district. He correctly predicted that the overwhelming majority of Pittsburgh area residents would eventually live in the hills rather than the valleys closer to the city.⁶

Olmsted's report favored one particular bridge-and-tunnel scheme, which was then proposed in the late 1900s by South Hills residents. This scheme proposed a road starting from Forbes Street at Sixth Avenue, rising to the bluff north of Second Avenue, and rising again to a new double-decker bridge over the Monongahela River. After crossing the river, the road would continue to rise at the same gradient as it entered a tunnel leading through Mt. Washington to the junction of Washington Avenue and Haberman Street in the South Hills.

With Olmsted's recommended uniform gradient of 3.5 percent, stretching from Forbes Street in the Point District to Washington Avenue on the north side of the South Hills, the tunnels would have been 80'-0" above the Liberty Tunnels' current location. Olmsted suggested this plan rather than a longer, lower bridge-and-tunnel plan (which was eventually adopted) because he felt the higher drop-off point for the tunnels would more easily facilitate the residential development of the uplands areas of Mt. Lebanon and Beechview (lower areas would be accessible via the Sawmill Run Road). In other words, the high-level plan, according to Olmsted, would have not only provided access to those areas that could be reached by a low-level bridge-and-tunnel scheme, but would have also provided convenient access to the "more important lands" on the hills that were not easily accessible via the low-level plan. The high-level plan, apparently, would have also been less expensive because it would have required a shorter tunnel. The high-level plan, however, was eventually abandoned because of the heavy grade and the height of the bridge it required.⁷

⁶ Frederick Law Olmsted, *Pittsburgh: Main Thoroughfares and the Downtown District: Improvements Necessary to Meet the City's Present and Future Needs* (Pittsburgh: Pittsburgh Civic Commission, 1911), 49-56.

⁷ Olmsted, *Pittsburgh*, 55. The high-level plan discussed by Olmsted was originally called the Haberman Tunnel Plan and conceived in 1908 or 1909 by Hermann Laub and F. I. Gesser. Throughout the 1910s, a number of other tunnel projects were offered, although none of them were proposed in conjunction with bridges. See Pittsburgh Department of Public Works, Bureau of Bridges, *Description of the Liberty Tunnels, Power Plant, and Bridge*, vertical files, Allegheny County Office of Records of Administration, Pittsburgh, Pa.

Olmsted's recommendations — or any major civic improvements — were forced to wait on account of World War I. In 1919, however, the Allegheny County Commissioners proposed a \$35.5 million bond issue to be placed on the 2 November ballot that would have allocated over two-thirds of its funding toward bridge construction. Part of this allocation would have included funds for the construction of the Liberty Bridge. The county rescinded its proposal prior to the election, however, in part because of rising opposition to the wording of the proposal, which included funding for a series of other bridges apparently not desired by the citizenry. Another similar bond issue failed in 1921.

The 1924 Bond Measure and the Public Works Department

In 1924, new county commissioners took over and the County Department of Public Works was reorganized. Norman F. Brown, appointed director of the Department of Public Works, helped to redraft the bond measure, now pared from \$35.5 million to \$29.207 million. This included a \$3.771 million allocation for the Liberty Bridge.

To help promote the bond measure, the Department of Public Works put together a booklet entitled "Forward or Backward?," arguing that infrastructure improvements permit a "natural forward step" that can save lives and improve living conditions generally. The booklet noted that the Liberty Tunnels, which were nearing completion, would not be exercised to their fullest potential without their "sister," the Liberty Bridge:

[The Liberty Tunnels] are performing but a small percentage of their usefulness [sic.] owing to the absence of a bridge over the Monongahela River connecting these tubes with the city proper and permitting of uninterrupted traffic between the South and other points in the county.... As long as the Liberty Bridge remains unconstructed [sic.], we can hope to enjoy but part of the advantages of the Liberty twin tunnels. Full returns are not being obtained on this investment.⁸

The measure finally passed on 22 April 1924.⁹

The plans for the bridge were to be executed under the direction of Vernon R. Covell, chief bridge engineer for the Department of Public Works. Covell, who had served as assistant county engineer from 1897 to 1903 and as deputy county engineer in charge of bridge maintenance from 1906 to 1922, was appointed county engineer in charge of design, erection, and maintenance of county bridges (and alterations to and construction of county buildings) on 16 October 1922. The reorganization of the county offices in 1924 gave him a new position as the chief engineer of bridges.

⁸ Pittsburgh Department of Public Works, *Forward or Backward?*, 1924, vertical files, Allegheny County Office of Records Administration, Pittsburgh, Pa.

⁹ The political machinations involved in the passage of the bond measure and other details pertaining to the Allegheny County Department of Public Works at this time are detailed in Peter M. Farrington, "The Allegheny County Highway and Bridge Program 1924-1932," Master's thesis, Carnegie-Mellon Univ., 1982.

It is unlikely, however, that Covell had much to do specifically with the design of the Liberty Bridge. In his memoirs, former Allegheny County bridge engineer George S. Richardson, who would go on to design the McKee's Rocks, Homestead High Level, Westinghouse Memorial, West End, Fort Pitt, and Fort Duquesne bridges, among others, noted that in late 1924 or early 1925, he was actually placed in charge of design for the new Point Bridge and the proposed Liberty Bridge. Richardson, a 28-year-old draftsman at the time, recalled that his own ability to manage loads on statically indeterminate structures at an early stage in his career was the reason he was given greater responsibilities within the department.¹⁰ He pointed out that Covell "did not participate in any way in the selection of type of structures for any of the bridges or any of the supervision or design of the selected type." Richardson did not recall Covell showing any particular interest in any phase of the design work for county bridges except for the railings to be used on the bridges.¹¹

Getting Started

By August 1924, however, neither Richardson nor anybody else in the Public Works Department had begun working on the Liberty Bridge plans — apparently because the issue of the bridge's northern approach had not been settled. One plan, proposed by the Department of Public Works, favored a two-level approach: one level linking with the Boulevard of the Allies and the other passing under the boulevard and terminating at Forbes and Shingiss Streets. The other plan, offered by the City Planning Commission, suggested terminating the approach at Second Avenue and Ross Streets. Nevertheless, by December 1924, despite lacking final approval for the approach, work had begun on the drawings.

The plans for the two-level northern approach included a provision to carve away the bluff along Shingiss Street and build a large, sloping reinforced concrete retaining wall to protect it. The river spans, originally planned as arches, were changed to cantilevers in order to comply with clearance requirements set forth by the U. S. Army Corps of Engineers. The original plans apparently would have obstructed navigation, and all bridges built over navigable waterways in the United States had to provide enough clearance, both vertical and horizontal, to comply with

¹⁰ Richardson explained that from 1924 onward, he was given "complete responsibility for estimates, supervision of all superstructure designs, preparation of contract plans, checking of erection and shop drawings for all of the remaining 1924-28 programs." See George S. Richardson, "History of Allegheny County Bridges," 14 Aug. 1979, prepared for Steven J. Fennes, professor of Civil Engineering, Carnegie-Mellon Univ., vertical files, Pittsburgh History and Landmarks Foundation, Pittsburgh, Pa.

¹¹ Richardson, "History of Allegheny County Bridges," 5.

the federal codes.¹² The cantilever design allowed for the construction to proceed without the aid of a channel-obstructing falsework.¹³

On 31 January 1925, Congress passed an act granting Allegheny County permission to build the bridge.¹⁴ The petition for a "public bridge ... across the Monongahela River, extending from the Liberty Tunnels, at Brownsville Avenue, to Forbes Street, in the City of Pittsburgh," was adopted by the Allegheny County Commissioners on 20 April 1925, and by the grand jury on 7 May 1925.¹⁵ On May 24, a permit was issued by the U.S. War Department to begin construction, and the Allegheny County commissioners immediately began advertising for bids.¹⁶

On 7 July 1925, the Dravo Contracting Company was given permission to begin work on the substructure. The superstructure, however, was delayed because of complications again rising from the northern approach's proposed location. The situation was cleared up in October of 1925 and work proceeded. By the end of the year, erection of the masonry piers and approaches was well underway. In September 1926, approximately 500 feet of the steel had been erected and a local newspaper predicted completion by September 1927.¹⁷ In June 1927, the superstructure was finished and work on the troublesome northern approach was the only major part of the bridge awaiting completion. By March 1928, however, the project was complete and the bridge was ready to be thrown open to traffic.

A grand opening celebration was held on the bridge on 27 March 1928, featuring a five-mile-long procession of cars, bands, floats representing organizations from every borough and township in the South Hills, and many county and civic officials.¹⁸ The parade began at Castle Shannon and Washington roads in Mt. Lebanon and passed through Dormont, Brookline, and Allentown before heading across the Smithfield Street Bridge, where it wound from Fifth Avenue to Sixth Avenue before proceeding onto the bridge. The parade concluded at the southern end of the bridge, just before the Liberty Tunnels, where city and county officials gave

¹² "Plans for Liberty Bridge Changed to Meet Objections," *Pittsburgh Post-Gazette* (1 Feb. 1925); *U.S. Statutes at Large* 34 (1911), 84-6.

¹³ A photograph taken of the Liberty Bridge during construction depicts this process nicely; see Joseph White and M. W. von Bernewitz, *The Bridges of Pittsburgh* (Pittsburgh: Cramer Printing and Publishing Company, 1928), 4.

¹⁴ *U.S. Statutes at Large* 43 (1911), 802-3. This act, however, did not specify the bridge's exact location, but said it would be built "one and two-tenths miles" from the Monongahela's confluence with the Allegheny.

¹⁵ Allegheny County, Pennsylvania, *Road Docket*. Court of Quarter Sessions No. 2, Apr. 1925.

¹⁶ "Liberty Tunnel Plans Approved by War Office Engineers," *Pittsburgh Post-Gazette* (27 May 1927).

¹⁷ "Liberty Bridge Work is Speeded," *Pittsburgh Telegraph* (15 Sep. 1926).

¹⁸ An article printed after the opening noted that the floats in the procession represented "practically every business house in the South Hills." See "Five-Mile Parade Marks Opening of Liberty Span," *Pittsburgh Post-Gazette* (28 Mar. 1928), 1.

speeches. Several South Hills communities declared a half-holiday for the event, and flags and bunting were draped over several buildings along the parade route.¹⁹

Many South Hills businesses took out advertisements in the *Pittsburgh Post-Gazette* the following day, celebrating the bridge's opening and noting that it would make their businesses more accessible to the public. Several hundred vehicles that had begun the procession in Mt. Lebanon did not reach the bridge until well after the conclusion of the ceremony. Aerial bombs and fireworks accented the celebration. A photograph taken during the procession shows the bridge decorated with American flags and hundreds of Model-T Fords packed onto the deck.²⁰ It was the largest automobile procession in Pittsburgh history.

The bridge's construction struck a significant blow at the streetcar, which began a slow and irreversible decline from that point onward. It was thus symbolic that during the grand opening ceremonies, city-bound streetcars were delayed for nearly an hour waiting for the procession to pass.

Bridge Details

When it opened, the Liberty Bridge was the longest, highest, and most costly span yet built in the city. Its 2,663'-0" total length includes lengthy approaches on either side.²¹ Most visually striking are its two 450'-0" river spans, whose profiles resemble arches but are actually cantilevered from the piers with a minimum vertical clearance of 50'-0".²² Extending from cantilever arms of each of these spans are small suspended spans — ordinary trusses — in the middle. These cantilevers rest upon three reinforced concrete piers with granite facing. These piers were built using caissons, are anchored in the riverbed, and provide a 450'-0" clear width for navigation.²³

The bridge's roadway, as originally constructed, was asphaltic concrete, 38'-0" between curbs. The roadway spans the Monongahela River and portions of land on either side, including six streets and three railroad lines. The bridge extends from the downtown area on a 1.6 percent ascending grade to the Liberty Tunnels. At its highest point, the bridge rises 113'-0" above the river.

¹⁹ "City, County Join in Bridge Exercises Today," *Pittsburgh Post-Gazette* (27 Mar. 1928), 1.

²⁰ *Pittsburgh Post-Gazette* (28 Mar. 1928), 1.

²¹ Measured from the north portals of the Liberty Tunnels to Forbes Street, the bridge's length is 3,657'-0", 2,667'-0" of which is over land and 990'-0" of which is over the river.

²² The cantilever method of construction was also used for the Washington Crossing Bridge over the Allegheny River, completed in 1924. At \$2,345 million, that bridge was the most costly Pittsburgh span until the completion of the Liberty Bridge. See U.S. Department of the Interior, HAER No. PA-447, "Washington Crossing Bridge," 1997, Prints and Photographs Division, Library of Congress, Washington, D.C.

²³ The piers supporting the approaches are built of reinforced concrete on the south side, but are steel bents on concrete foundations under the northern approach.

At the northern approach, the central roadway of the bridge passes under the Boulevard of the Allies to Forbes Street, while two 44'-0"-wide ramps, or driveways, connect at grade with the boulevard in either direction. Another ramp, connecting the central roadway with Bigelow Boulevard over Fifth Avenue and Forbes Street, was built later. The northern approach's connection to Forbes Street required an 80'-0" deep cut into the hillside, the removal of approximately 108,000 cubic yards of earth and shale, and the erection of a 70'-0"-high, 18"- to 36"-thick reinforced concrete wall built on a 1:4 slope just west of the hilltop Duquesne University campus. The wall was anchored to its sloping bed of earth by steel bars placed on 4'-0" centers. Had the concrete wall been built vertically, rather than sloped, it would have required a 65'-0"-thick wall.²⁴ On its south side, the bridge roadway meets a traffic circle before the entrance to the Liberty Tunnels, with roads connecting to the Mt. Washington (now McArdle) Roadway and Brownsville Avenue.

The total cost came to \$3.436 million — \$335,000 less than the original \$3.771 million allocation provided by the 1924 bond measure. This total cost included damages paid out to owners of affected property, including the Pennsylvania Railroad. Over twenty-one different contracting companies worked on the structure, and approximately thirty different contracts were let during the course of its erection. Eleven thousand tons of steel were used in the superstructure.

The completion of the Liberty Bridge marked only the latest of a flurry of bridges built by the county since 1924, including the Three Sisters (Sixth, Seventh, and Ninth streets), Washington Crossing, and New Kensington bridges over the Allegheny River, and a new Point Bridge over the Monongahela. Five more were scheduled for completion in 1928. One source, however, proclaimed the Liberty Bridge to be the "most picturesque" of these county bridges.²⁵ The Liberty Bridge, in conjunction with the tunnels and the Mt. Washington Roadway (which was completed in mid-1928), represented a total public works expenditure of \$10.492 million.

Developing the South Hills

While the bridge was a major achievement for Pittsburgh, it had its most significant impact on the South Hills area. Like other suburban developments of the 1920s in American cities, the new roads for automobiles around the South Hills permitted development over a wider area than was stimulated by the trolley, whose fixed route allowed for a predominantly finger-like settlement pattern typical of late-nineteenth-century American streetcar suburbs.²⁶ Yet the

²⁴ Allegheny County Commissioners' Office, "Liberty Bridge Approach," 3 Feb. 1928, vertical files, Allegheny County Office of Records Administration, Pittsburgh, Pa.

²⁵ *Pittsburgh Press* (25 Mar. 1928), vertical files, Allegheny County Office of Records Administration, Pittsburgh, Pa.

²⁶ Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford Univ. Press, 1985), 181.

Liberty Bridge's opening did not mark the initial penetration of Pittsburgh's South Hills, nor did it stimulate its initial development.

The story of the South Hills extends back at least fifty years prior to the bridge's construction, as real estate speculators scrambled to find open land around the industrial mecca of Pittsburgh spreading along the Monongahela River's south shore. The very geography of the place, with steep hills rising up from the emhankments, isolated the South Hills from the city.²⁷

The first mode of transportation to penetrate the South Hills arrived in 1869, with the construction of the Monongahela Incline extending from the banks of the Monongahela River to the top of Mt. Washington. Real estate developers seized the opportunity to develop the South Hills area following the incline's construction, convincing county officials to approve the laying of tracks for their newly established Pittsburgh and Castle Shannon Railroad. This railroad connected the drop-off point of the incline to Castle Shannon five miles away.

Settlement along the railroad was not extensive, but the South Hills area continued to expand, however slowly, following the completion of the Duquesne Heights Inclined Plane in 1877. A trolley line that wound along Sawmill Road and up the slopes of Mt. Oliver, built in 1888, also contributed to settlement.

It was not until 1904, however, following the completion of the Mount Washington (South Hills) Transit Tunnel, that the South Hills began to truly develop. This tunnel allowed trolleys to travel from downtown Pittsburgh, across the Smithfield Street Bridge, to the South Hills Junction stop on the east side of Mt. Washington. From there, trolley lines extended to a number of areas in the South Hills, and the area's development took off.²⁸

Thus, before the South Hills became automobile suburbs, they had been inclined plane suburbs, railroad suburbs, and streetcar suburbs. The trolley initially stimulated the development of Mount Lebanon, Donmont, Brookline, Brentwood, Whitehall, and Castle Shannon, and in 1924, with the completion of the Liberty Tunnels (known locally as the Liberty Tubes), this development began in earnest and the real estate values in the South Hills increased significantly. Two days before the opening of the bridge, an article appeared in the *Pittsburgh Press* discussing the value of the new project to the South Hills. The article noted that in 1918, property values in Mt. Lebanon, for example, totaled \$3.783 million. By 1928, that figure had increased to \$14.5 million. The article attributed this increase directly to the tunnels and the bridge:

To reach their place of employment or the metropolitan business district, residents of the South Hills merely step into the car and within a few minutes are in the heart of the Golden Triangle.... The county commissioners have actually moved

²⁷ Franklin Toker, *Pittsburgh: An Urban Portrait* (University Park, Pa.: Pennsylvania State Univ. Press, 1986), 280.

²⁸ Walter C. Kidney, *Landmark Architecture: Pittsburgh and Allegheny County* (Pittsburgh: Pittsburgh History and Landmarks Foundation, 1985), 298.

the suburbs nearer the central business district by 10 to 20 minutes. A detour over hills, far beyond the direct goal of the urbanites, is no longer necessary.²⁹

The completion of the Liberty Bridge stimulated further development in these older suburbs, but following the Depression and World War II, development fanned much further out toward West Mifflin, Pleasant Hills, Bethel Park, and Upper St. Clair.³⁰

Among the more notable residential developments in the far reaches of the South Hills, spurred initially by the construction of the tunnels and the bridge, was the Pleasant Hills community. Pleasant Hills actually began developing almost entirely as tract housing as early as 1929 — one year after the bridge's completion. Access to and around Pleasant Hills was assisted by the construction of the Pleasant Hills Cloverleaf, a highway interchange built in 1939 that was the first of its type in the region and one of the earliest in the nation.

The towns of Bethel Park and Upper St. Clair, settled in the late eighteenth and early nineteenth centuries, also grew dramatically following the opening of the tunnels. In fact, the completion of the tunnels and the bridge affected nearly all of the communities in the South Hills. It has only been in the past twenty years that their impact for residential development in this region has declined.

The bridge's importance in the development of the South Hills, while significant, should not completely overshadow the far-ranging impact of its northern approach span. While the approach initially linked the bridge with the Boulevard of the Allies, thus providing a direct route from the South Hills to the Oakland community, it also connected with the new Crosstown Expressway, part of Robert Moses' 1939 master plan for the city. Today, the Crosstown Expressway becomes Interstate 279, which heads to northern Pittsburgh.

Through the Years

The completion of the bridge, however, hardly froze the structure in time. In 1931, for example, a new ramp at Horace Street was built, allowing westbound motorists to drive directly to the Liberty Bridge approach instead of making a left-hand turn which forced them into the general flow of downtown traffic.

In 1941, the bridge was closed as the roadway was widened to 40'-0". In the early 1960s, once bridge ownership was transferred to the state, the bridge began to deteriorate, in part because there was a disagreement as to whether the state's ownership applied to the whole bridge or just the curb-to-curb roadway.³¹ Minor repairs were made to the bridge through the 1960s and 1970s, but by the early 1980s the bridge was deteriorating once again. Its piers were weakening, the deck was riddled with potholes, and its weight limit, reduced to fifteen tons in 1976, required

²⁹ "South Hills Areas Benefit Most From Liberty Projects," *Pittsburgh Press* (26 Mar. 1928).

³⁰ Toker, *Pittsburgh*, 280.

³¹ "Get Liberty Under Law," *Pittsburgh Post-Gazette* (12 Jul. 1973).

a two-mile detour for trucks delivering steel and other industrial goods. It was estimated that the detour cost \$1.2 million per year, and structural reinforcements were sorely needed.³²

In 1982, the Pennsylvania Department of Transportation authorized a \$31.6 million rehabilitation project, which included welding four million pounds of repair steel to the bridge, a new, wider roadway (56'-0"), new sidewalks, and new handrails. This project, carried out by the Dick Corporation, limited traffic flow on the span for nearly two years.

In 1988, the bridge was the only deck truss to be included in the state's multiple-resource nomination to the National Register of Historic Places. The nomination's statement of significance noted, primarily, the long length of its main spans. Although the nomination treated the bridge essentially as an isolated object, and there is a more involved story surrounding the bridge's construction, its connection to the Liberty Tunnels, and the crucial role it played in the development of suburban Pittsburgh. Indeed, it is the association of the Liberty Bridge with the Liberty Tunnels and the development of Pittsburgh's South Hills region that makes it truly significant.

³² Gene Grabowski, "Pa. Defends Bridge-Repair Program," *Philadelphia Inquirer* (22 Aug. 1981).

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