We cross the highway bridges that span Pittsburgh’s rivers without much thought.

From a driver’s and walker’s perspectives, our bridges are merely sections of roadway. This was not always so; through the 19th century and into the 20th, drivers and pedestrians alike paid tolls to cross Pittsburgh’s river bridges. Private and public/private bridge companies owned most of the highway bridges crossing the three rivers. They charged tolls and used the money to maintain their spans and to pay dividends to their stockholders. Shortly after the turn of the century, however, Allegheny County government embarked on a mission to free all of the highway bridges within its boundaries. This effort put the county on a collision course with merchants all along the Allegheny River. The conflict raged for over a decade and was finally settled by no less than the Secretary of War of the United States. Or was it?

As far as building highway bridges across the Pittsburgh’s rivers, Allegheny County government was a latecomer. Starting with the Monongahela Bridge Company in 1818, public/private stock companies built and owned almost all of the highway bridges in the city’s environs through the 19th century. By 1900, bridge companies had built 25 spans across the Allegheny, Ohio, and Monongahela rivers within Allegheny County’s boundaries.
The county, too, owned many small bridges over secondary streams. When the Pennsylvania Assembly created the office of the County Engineer in 1873, the county already owned 70 bridges; 58 were constructed of wood, nine were of stone, and the three newest ones were made of iron. It would be another 30 years before the county considered building major spans across its rivers.

In 1905, County Engineer Charles Davis declared that "facilities for easy and uninterrupted communication across our large rivers between different sections of this county and between sections of this county and adjoining counties are very inadequate." Engineer Davis proposed bridges at Natrona on the Allegheny, at Buena Vista Station on the Youghiogheny, and at Sewickley on the Ohio. At that time, the county purchased its first river bridge, the Williamsport Bridge on the Monongahela River, from the Williamsport Bridge Company for $120,271.92.

Following this inauguration into the river span picture, Allegheny County government embarked on an explosion of activity, becoming the major player in the area. By the end of 1911, it had built three bridges: the new Williamsport Bridge in 1910, the Hulton Bridge on the Allegheny River in Harmar Township that same year, and the Sewickley Bridge on the Ohio River in 1911.

But in this flurry, the county purchased many more bridges than it built. In 1909, the Pennsylvania Assembly enacted legislation designed to induce counties to purchase toll bridges from private owners. Shortly afterward, Allegheny County resolved to purchase all toll bridges in its district and make them free to the public.

In 1909, the Pennsylvania Assembly enacted legislation designed to induce counties to purchase toll bridges from private owners. Shortly afterward, Allegheny County resolved to purchase all toll bridges in its district and make them free to the public.

On the Ohio River, the county purchased the bridge on the back channel connecting Neville Island with Coraopolis. On the Monongahela River, between 1911 and 1926, the county purchased the Elizabeth, Mansfield, Brown’s (Homestead), McKeesport-Duquesne, Rankin, and Hays-Glenwood. The county abolished tolls on all of these bridges once it took ownership.

But it was the purchase of several bridges on the Allegheny River that led the county into a long conflict with a group of merchants along that stream. The seeds for this battle were planted in 1899 when the United States Congress passed the Rivers and Harbors Act, which placed navigable waterways under the jurisdiction of the federal government. One of the provisions of this legislation gave the Secretary of War authority to order any bridge to be altered or even removed if he deemed it an obstruction to navigation. Shortly after the Rivers and Harbors Act became law, several companies and communities involved in commercial navigation on the Allegheny River petitioned the Secretary of War to declare the Sixth Street, Ninth Street, Sixteenth Street, Thirtieth Street, and Forty-third Street bridges obstructions to navigation and order them to be altered.
In 1902, the Army Corps of Engineers held hearings in Pittsburgh to get the details of the matter. The complainants, referred to in court documents as the “River Interests,” were spearheaded by the Pittsburgh Coal Exchange. The River Interests claimed that the bridges in question were too low for steamboats to pass under and their pier locations created a hazard to boats. Lining up in opposition to the River Interests were Allegheny County, the City of Pittsburgh, and the bridge companies that owned the spans. They argued that alterations to the bridges and adjoining approaches would be too costly to justify accommodating the River Interests, particularly considering the infrequency of water levels rising to the point where they made the spans impassible for the higher steamboats. Captain W.L. Sibert, who chaired the hearings, reported to Secretary of War Elihu Root that the bridges posed an unreasonable obstruction to navigation and recommended that they be altered.  

But Secretary Root, rather than accept Captain Sibert’s recommendation, took a broader view of the issue. “Practically every bridge is some obstruction to navigation,” he replied in his decision. “The bridge over the East River in New York interferes with many vessels which might seek an important part of the harbor. The bridges across the Chicago River entirely stop all navigation in that crowded thoroughfare of commerce during a large part of every day; yet the Supreme Court holds the obstruction in both cases to be reasonable.”

Secretary Root agreed with the county and city officials that costs of altering approaches were not justified for the few days each year when high water made the bridges impassible. Secretary Root handed down his decision on January 23, 1904: “The applications are denied.”

Elihu Root resigned as Secretary of War only a few days after handing down the Allegheny River bridges decision. The River Interests immediately filed an appeal with his successor, William Howard Taft. Secretary Taft held oral arguments on February 25th and 26th of 1904. In his decision he refused to reverse Root’s ruling, even though he said that personally he felt...
the bridges should be altered to the River Interests' needs.9

The River Interests awaited a change in Administrations in the War Department, then tried again in 1908. On November 30 of that year, the Army Corps of Engineers again held hearings in Pittsburgh, chaired by Colonel William H. Bixby. The River Interests explained the complaints again. “These are of two kinds,” the rivermen stated, “first, by the indiscriminate locations of numerous bridge piers without regard to the trend of the channel, and, secondly, by insufficient height. It is on the downstream course that the piers are most dangerous and it is at the four lower bridges where the danger is greatest. That is because of their close proximity to each other. The cross currents created when the stage is above pool level and the necessity of dodging between piers and at the same time taking account of the scant clearance under the bridges, render navigation hazardous and have occasioned many wrecks and some loss of life.”10

Allegheny County, the City of Pittsburgh, the bridge companies, and the railroad companies again lined up to oppose the River Interests’ petition. The city hired Frederick Law Olmsted and Colonel Thomas W. Symons to study the bridge question. Olmsted and Symons opened up their final report with a more detached statement of the problem:

There are three great interests concerned in the problem of the bridges over the Allegheny River at Pittsburgh; (1) those who frequently cross the river or whose business requires the transportation of workmen, raw and manufactured material, and supplies from one side of the river to the other; (2) those concerned in the navigation of the river and harbor, and (3) those who own and operate the bridges.

The aim in arriving at a solution of the bridge problem must be to adjust these conflicting interests impartially; and the factors to be considered in arriving at such an adjustments are these: First, the amount and importance of the traffic likely to be effected in each case. Second, the extent to which any given solution would benefit or injure the bridge traffic and the river traffic, respectively.11

Initial remarks did not favor the River Interests’ case. Olmsted and Symons discovered from U.S. Army Corps of Engineers records that annual tonnage crossing over the bridges was 30 times greater in volume and 90 times greater in value than that passing under. Passenger traffic was 1,800 times greater going across the bridges than passing under. Furthermore, they found that the river traffic was steadily declining, and they attributed this decline not to obstructive bridges but to a lack of modern terminal facilities, boats, and business practices. They judged that “the character of the traffic over the bridges is such that a given degree of interference with it is a far more serious annoyance to the public than the same degree of interference with river traffic.”12 In regard to clearances, Olmsted and Symons suggested that riverboats be built to accommodate bridges, rather than bridges built to accommodate riverboats.13

However, Olmsted and Symons did
The Thirtieth Street Bridge was partially destroyed by fire on July 8, 1921.

Secretary Dickinson admonished the River Interests for appealing the case every time a new Secretary of War took office. They recommended some bridge alterations. They reported that the piers of the Ninth Street, Sixteenth Street, and Forty-third Street bridges did obstruct navigation. They recommended rebuilding these bridges with new pier locations giving wider channel clearances. They also recommended that a standard vertical clearance of 37 feet above water be set for all of the Allegheny River bridges.\(^{14}\)

The city and county were not inclined to implement even these recommendations. They claimed that they would need to review the results of several other studies in progress before they could consider any road or bridge construction. The Pittsburgh Flood Commission was studying a system of impounding waters of the Allegheny and Monongahela rivers farther upstream, and also studying the possible construction of protective embankments in the city. Pittsburgh was at the same time considering a city-wide plan for street and transit line improvements. Finally, the city was in the middle of leveling “the Hump,” an obstructive hill at Grant Street. Trucks carried the fill from this excavation across the Allegheny River to raise the lower grade streets on the North Side. Bridge construction now would halt that project.\(^{15}\)

The River Interests countered the claims of insufficient river traffic by pointing out that the Corps of Engineers’ figures for freight going down the Allegheny River were, by the Engineers’ own admission, incomplete.\(^{16}\) They also compared their bridge improvement request to railroad expansion: “If railroad construction would await the development of a traffic,” they reasoned, “how many railroads would we have? If railroad construction had not been followed by traffic development, all the courts could not hold the receiverships.”\(^{17}\) Additionally, they charged that the Pennsylvania Railroad’s opposition to this case was not due to the costs of altering their own bridges, but rather due to the competition an improved Allegheny River would give to
their own railroad tracks that lined its banks. The River Interests listed five major changes since Secretary Elihu Root's decision:

1) Two new dams on the Allegheny River extended the slackwater system all the way to Natrona, Pa., at a cost of $1,658,397. The work, cost, and purpose would be lost to the public unless the bridges were raised sufficiently to afford free passage of suitable boats to all navigable stages.

2) Five new dams on the Ohio River below the Davis Island Dam added 25 miles of slackwater to the Davis Island Pool. This pool, which extended into the Monongahela and Allegheny rivers, was being obstructed by these bridges.

3) The City of Pittsburgh's absorption of Allegheny City, directly across the Allegheny River and now Pittsburgh's Northside, would make local improvements easier. The city was at that time raising street grades on both sides of the river. Property owners even waived damage claims to facilitate this work.

4) The Supreme Court of the United States had recently ruled that bridge owners were not entitled to compensation when required to alter obstructive bridges under the Rivers and Harbors Act of 1899.

5) The River Interests claimed that the railroads alone were not adequate to carry all of the country's freight and that the U.S. Congress acknowledged this by creating the National Waterways Commission. Both the Democratic and Republican parties recently added water transportation to their platforms. Pittsburgh and its environs suffered from the inadequacy more than any other region.

At the conclusion of this round of hearings, Colonel Bixby recommended to the Secretary of War, now J.M. Dickinson, that the bridges were obstructive and should be altered. But again, a sitting Secretary of War proved reluctant to reverse the decision of one of his predecessors. Secretary Dickinson admonished the River Interests for appealing the case every time a new Secretary of War took office. He said that the judgment of a Secretary of War "should not upon a new proceeding be overruled unless it plainly appears that an error has been made. Such a judgment should, unless there is plain error, bring repose, and parties should not be harnessed by experimenting with successive heads of departments." The secretary found no clear error in either Root's or Taft's decisions.

As to the specific points made by the River Interests, Secretary Dickinson replied that he was authorized to order bridges altered should they obstruct navigation at that time, but not because they may obstruct traffic after some possible future improvements are made. Improvements completed since the earlier decisions were not new developments in the case because they'd been in the works during those hearings and Root and Taft were aware of them. Neither did the National Waterways Improvement Movement impress Secretary Dickinson. He declared he would not base a specific order to raise certain bridges on a broad national movement to improve waterways.

The questions of constitutionality and compensation were not concerns in previous decisions, the secretary pointed out, and were not now. And Pittsburgh annexation of Allegheny City did not facilitate approval, Dickinson noted, because the unified city opposed the bridge alterations.

"For the foregoing reasons," Secretary Dickinson decided on March 6, 1911, "I do not approve of the recommendations, and decline the paper prayer of the petitioners." During these proceedings the County of Allegheny proceeded with acquiring toll bridges on the Ohio and Monongahela rivers. On the Allegheny, a court order made the Sixth Street, Seventh Street, Ninth Street, Sixteenth Street, Thirtieth Street, and Forty-third Street bridges eligible for county takeover on December 10, 1910. But the county did not want to acquire bridges that would immediately require expensive alterations, and awaited the results of the hearings. With Secretary Dickinson's decision the county moved...
forward with purchasing these bridges, and declaring them toll-free on March 16, 1911.26 County Commissioner J.D. O’Neil considered the bridge alteration issue closed. “Three Secretaries of War have decided against it,” he noted. In subsequent hearings County Commissioner I.K. Campbell stated flatly that the county would not have taken the bridges had the commissioners believed the secretaries’ orders would be reversed.27

But the River Interests did not consider the matter closed. A second Rivers and Harbors Act passed in 1913 gave new life to their efforts. This act allocated $300,000 for Allegheny River improvements, but stipulated that the money would not be released unless the bridges at Pittsburgh were modified in accordance with Colonel Bixby’s recommendations to Secretary Dickinson.28 The River Interests again petitioned the War Department, and Secretary of War Lindley M. Garrison ordered new hearings in Pittsburgh. The fight was on again.

Lieutenant Colonel Francis R. Shunk chaired this round of hearing, which began in December of 1915. I.K. Campbell, now a former county commissioner, reported that the county monitored traffic on the river before acquiring the bridges. The county’s study showed a sharp decline in river freight over the past 20 years. E.K. Morse, consulting engineer for the county, testified that the costs of rebuilding the bridges, approaches, and adjoining roads would “constitute a crime upon the city.”29

But in Lt. Col. Shunk’s opinion, the cost of alterations was not a concern of the War Department. Although he admitted that the importance of the amount of river freight could be questioned, he pointed out that no one involved seriously denied that the bridges were obstructive. In fact, Shunk showed himself to be a strong proponent of river improvements:

The valley of the Allegheny is rich in natural resources, especially in these kinds that are benefited by water transportation. There are coal deposits which may be compared with those of the Monongahela and an abundant supply of excellent building stone and brick clay. The Allegheny Valley is greater in area than the Monongahela and is far superior as farming country. The fact that these resources are not adequately developed is, in my opinion, largely due to the obstructions at the mouth of the Allegheny.30

He advocated the proposal laid out by the Bixby Board to establish a fairway 400 feet wide extending several miles up the Allegheny River. “The channel thus laid down is obstructed by no fewer than nine bridge piers.”31 Lt. Col. Shunk recommended to the Secretary of War that the bridges be condemned as obstructions to navigation.

But Shunk’s recommendations were submitted during yet another change in Secretaries of War: Newton D. Baker was appointed in 1916. Rather than hold lengthy hearings yet again, Secretary Baker heard oral arguments in December, then allowed both sides to file supplemental briefs to his office. Early in 1917, he visited Pittsburgh to view the situation first hand. Finally, on March 28, 1917, Secretary Baker issued his judgment: he ordered all six Allegheny River bridges to be raised and their piers altered to widen the river channel.32

Certainly the matter was now settled. The United States Secretary of War had at last handed down his decision. The order forced the county to replace the superstructures of six bridges and rebuild almost all of their piers. County engineers estimated the cost of the work would total $6 million, not counting work on the approaches and property damage. On top of that, the secretary’s order stipulated that all work be completed within five years. At the end of that period, Pittsburgh would have six new bridges crossing the Allegheny River.33

But it was not to be. Interference in fulfilling the River Interests’ dreams came once again, this time not from the City of Pittsburgh or the County of Allegheny, but from Europe. The United States had
entered World War I. With steel production now supplying the war effort, the county found it difficult to obtain construction materials. Labor was also scarce, as men filled the ranks of the armed forces. The county engineer's office itself lost eight men to military service. The War Department granted the county a suspension of the bridge order until the war was over.3

But what the Secretary of War of the United States did not accomplish, the natural aging and hazards of wooden bridges did. On April 23, 1918, the Sixteenth Street Bridge caught fire and burned down. County officials submitted a priority request for construction steel, but their request was denied. They then established a free ferry service at the site of the bridge while they designed the new span and waited for steel to become available.34 Construction of the new bridge did not commence until 1921. The new Sixteenth Street Bridge – Pittsburgh's first steel through arch bridge – opened for traffic in January 1923.

During this period, the elderly wooden Forty-third Street Bridge became so dilapidated that it leaned to one side. It had partially burned several times and remained a fire hazard. In 1922, county workers removed its roof and side coverings to alleviate side wind pressure so the wind would literally not knock it down. The following year, they installed extra timber struts into the truss to prevent further leaning.35 When it was finally demolished, Pittsburgh said "good-bye" to its last remaining wooden river crossing.

Construction of a replacement commenced in 1923. The county engineers put the new span at Fortieth Street, deeming this site more suitable for river navigation and eliminating grade crossings with the railroad tracks lining the river. They moved Ohio Street 1,500 yards farther away from the river on the Millvale side, and purchased land from the U.S. Arsenal on the Lawrenceville side to accommodate the bridge's approaches.36

The order forced the county to replace the superstructures of six bridges and rebuild almost all of their piers. County engineers estimated the cost of the work would total six million dollars, not counting work on the approaches and property damage. On top of that, the secretary's order stipulated that all work be completed within five years.

The Fortieth Street Bridge opened for traffic on December 29, 1924, christened the Washington Crossing Memorial Bridge. Historical Society of Western Pennsylvania President William H. Stevens suggested the name and the opening date, pointing out that George Washington crossed the Allegheny River near this point on return from his historic and fateful mission to Fort LeBoeuf.38 On October 18, 2003, the Historical Society, the Boy Scouts, and PennDOT commemorated the 250th anniversary of Washington's crossing with a re-enactment at the bridge and the restoration of the state seals that line its railings.

By the time the Fortieth Street Bridge opened, the county had designed and redesigned plans to replace the bridges at Sixth, Seventh, and Ninth streets. County engineers even considered building hydraulically powered moveable bridges that would rise with the river level at the three sites.39 They decided, however, that these designs would cause too much inconvenience for traffic crossing over the bridges. In 1923, the county submitted plans to the U.S. War Department, along with a myriad of other approving agencies including Pittsburgh's City Arts Commission, for regular steel truss bridges at the three sites. The War Department approved the plans but the City Arts Commission did not; the commission considered the bridge designs too
The Sixth Street Bridge was completed and opened to traffic in 1928, winning the American Institute of Steel Construction’s “most beautiful bridge constructed in America” award for that year.

This posed a problem for County Engineer Vernon R. Covell: on the north shore of the Allegheny, the rock bed needed for an anchorage for suspension bridges lay too deep to be reached. Indeed, the suspension bridge at Seventh Street required improvement after its anchorage slipped forward toward the river. On the south shore, proposed wharf improvements precluded the type of massive anchorages such bridges would require. Covell looked to Europe for inspiration; German engineers had recently built a suspension bridge across the Rhine River at Cologne which anchored its cables in its own deck. Covell decided to try this method. He is erecting the first self contained suspension type bridges that have ever been built in the United States,” Covell wrote in 1924. He designed the Sixth, Seventh, and Ninth Street bridges as identical spans, and they became known as “the Three Sisters.” Covell used eyebars chains rather than the more traditional wire cables, as they more easily anchored into the plate girders that travel the length of the decks.

After a complete reorganization of the County Engineer’s Office in 1924 into the new Department of Public Works, and a $28 million bond issue for these and other infrastructure improvements, construction of the Three Sisters finally commenced. The Seventh Street and Ninth Street bridges opened for traffic in 1926. The Sixth Street Bridge was completed and opened to traffic in 1928, winning the American Institute of Steel Construction’s “most beautiful bridge constructed in America” award for that year.
wrought iron truss bridge at Thirty-first Street. Fire destroyed two sections of the bridge on July 8, 1921. The county established a ferry service at the site and replaced the two missing sections with a wire suspension bridge for pedestrians only. County engineers designed a through truss bridge for the site in 1922, but property owners affected by these plans objected. The county moved the site of the new bridge to Thirty-first street, and designed a deck arch bridge similar to the Fortieth Street Bridge.46

On December 1, 1928, official opening ceremonies were held for the Thirty-first Street Bridge. Like every river bridge thus dedicated in the city's history, the bridge opened amid parades and speeches on its deck. But this celebration would include a feature no bridge opening had included before; the Pittsburgh Coal Exchange, long the leader of the River Interests, sponsored all celebrations. It arranged, appropriately enough, with the County of Allegheny and the U.S. Army Corps of Engineers at Pittsburgh to also have a pageant of boats float from the Monongahela Wharf to the Thirty-first Street Bridge. This flotilla marked the fulfillment of the Secretary of War's order and the opening of the Allegheny River to standard navigation. At the formal presentation ceremony, the county commissioners presented the Thirty-first Street Bridge to the people of Pittsburgh. Fittingly, the president of the Pittsburgh Coal Exchange accepted the bridge on behalf of the people.47

Gary Link received an M.A in History from Indiana University of Pennsylvania, and the Archival Museum, Editing Graduate Certificate in History from Duquesne University. He has documented historic bridges in Oregon for the Historic American Engineering Record (HAER), and is the author of The Burnt District, a historical crime/mystery novel set in Pittsburgh during the Great Fire of 1845. He last wrote for this magazine in 1989 with "The Civil War Deception of Robert Arthurs."