Historic Resource Inventory
CITY OF PORTLAND, OREGON

0-125-00000

0 W. Burnside Street
QUARTER SECTION MAP #: 2929.5
Downtown Community Association
Kerns
Buckman

ORIGINAL NAME: Burnside Bridge

ORIGINAL FUNCTION: Bridge

DATE BUILT: 1924-1926

ARCHITECTURAL PLANS BY: Hedrick, Ira G., Kremers, Robert E., Lindenthal, Gustav

Rank II

SPECIAL FEATURES AND MATERIALS:
Steel double leaf Strauss bascule bridge. Draw span.

AREAS OF SIGNIFICANCE: Transportation, Engineering

127

11

0-125-00000

Transportation: The present Burnside Bridge replaced an earlier bridge, built in 1892-1894. The old bridge was not designed for heavy automobile traffic and by the 1920s was obsolete. When it was dismantled, truss spans from it were incorporated into the Sellwood Bridge, the Bull Run Bridge near Rosslyn Lake, a bridge near Aberdeen, Washington, and the Sandy River bridge at Dodge Park.

BIBLIOGRAPHY:

Rhyne, Charles, personal file, 1982.

Present owner as of May 1981: Multnomah County
MAILING ADDRESS: 1021 S.W. Fourth Avenue, Portland 97204

No Preservation Funding

Negative: 1201-12

111

United States Department of the Interior
National Park Service

National Register of Historic Places
Listed 11-14-2012
No. 12000931
in SHPO

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

Historic name Burnside Bridge

Other names/site number

2. Location

street & number Spanning the Willamette River at RM 12.7 ☐ not for publication

city of town Portland ☐ Vicinity

State Oregon code OR county Multnomah code 051 zip code 97209

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this X nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property X meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___ **national** X **statewide** ___ **local**

Signature of certifying official/Title: Deputy State Historic Preservation Officer — Date 9.20.12

Oregon State Historic Preservation Office
State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official — Date

Title — State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:

___ entered in the National Register

___ determined eligible for the National Register

___ determined not eligible for the National Register

___ removed from the National Register

___ other (explain:)

Signature of the Keeper — Date of Action

Burnside Bridge
Name of Property

Multnomah Co., OR
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply)

- ___ private
- **X** public - Local
- ___ public - State
- ___ public - Federal

Category of Property
(Check only one box)

- ___ building(s)
- ___ district
- ___ site
- **X** structure
- ___ object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Non-Contributing	
		buildings
		sites
1		structures
		objects
1	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing)

Willamette River Highway Bridges of Portland, Oregon

Number of contributing resources previously listed in the National Register

None

6. Function or Use

Historic Functions
(Enter categories from instructions)

TRANSPORTATION: Road-Related, Bridge

Current Functions
(Enter categories from instructions)

TRANSPORTATION: Road-Related, Bridge

7. Description

Architectural Classification
(Enter categories from instructions)

NO STYLE

Materials
(Enter categories from instructions)

foundation: CONCRETE
walls: N/A
roof: N/A
other: STEEL

Narrative Description

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

Summary Paragraph

The Burnside Bridge opened to traffic in May 1926 and spans the Willamette River in downtown Portland, Oregon, at River Mile 12.7, just upstream from the Steel Bridge, within the core of the central commercial district of the city. A steel deck truss with a central, double leaf Strauss bascule, the bridge measures 788 feet long between the abutment walls (i.e., not including the approach spans). The first bascule bridge to rely upon a concrete deck for its movable span, at 5000 tons (according to Wortman, 2000), the Burnside is one of the heaviest bascule bridges constructed in the United States. The Burnside Bridge design was initially the work of Ira G. Hedrick and Robert E. Kremers, with some modification and construction supervision by Gustav Lindenthal. The bridge is owned and maintained by Multnomah County.

Narrative Description

The Burnside Bridge has been well documented in recent years, with most studies related to repair and upgrade projects that have allowed the structure to remain a viable element of the Portland area transportation system. In 2000, Sharon Wood Wortman updated and augmented the existing Historic American Engineering Record documentation of the bridge. That document, HAER No. OR-101, serves as the primary basis for the following information, much of which is taken verbatim from Wood Wortman's exhaustively researched narrative.[1]

Setting

Located at River Mile 12.7, the Burnside Bridge connects West Burnside Street and East Burnside Street across the Willamette, and serves as the geographic center of the city as defined by an orderly, gridded, street system and by the Willamette River.[2] The bridge's east side approach spans three city blocks, crossing the Union Pacific Railroad's main line and Interstate 5 before terminating at the intersection of NE and SE Martin Luther King, Jr. Boulevard (formerly Union Avenue), a major north–south route through east Portland. On the west end of the Burnside Bridge, the approach structures span the Portland Harbor Wall, Tom McCall Waterfront Park, and the SW Naito Parkway (formerly Front Street), as well as the Metropolitan Area Express (MAX) line, Portland's light rail mass-transit system.

The Burnside Bridge is an important trans-Willamette River link within the Portland street system, connecting the downtown core on the west with the business and residential uses of east Portland. The bridge also plays an important role in the city's waterfront development, with the area under its western approach spans serving as the locale of a popular and long-running Saturday market.

[1] Sharon Wood Wortman. *Burnside Bridge, Historic American Engineering Record [HAER No. OR-101].* (HAER/ODOT in cooperation with Multnomah County, 2000).

[2] Burnside Street divides the city's north and south halves, while the Willamette River divides the city east–west, creating four directional quadrants that help define virtually all of Portland's streets.

Design

The Burnside Bridge is generally described as a steel deck truss with a double-leaf bascule, rising from concrete piers. There are three steel deck spans and two side spans. The bridge's main movable span, a Strauss bascule, is divided into two halves or leaves that rise vertically to create approximately 200 feet of horizontal clearance. By 1926, the Strauss bascule had become the dominant form of movable-bridge spans, the survivor of a group of bascule designs that had been in competition during Portland's earlier bridge construction era.[3] The Burnside Bridge's height above the river is 64 feet. The Burnside's road deck is solid concrete 4¾ inches thick, and believed to be the first bascule span in the United States to have been constructed with a concrete deck.

> A recent far-reaching departure in bascule bridge design just introduced by the Strauss Company is the provision of a concrete floor on the moving leaf. This has been successfully accomplished for the first time under Strauss patents, in the Burnside Street Bridge at Portland, Oregon, which is further distinguished by being the largest double leaf deck bascule yet built.[4]

The main span of the bridge, the bascule or draw span, is 252 feet long between the trunnions, with its two leaves each 126 feet long and built of riveted steel. At the time of its completion the Burnside Bridge was the largest double-leaf bascule bridge that had ever been built, each leaf weighing some 930 tons and balanced by a 1,700-ton counterweight. The total weight on each trunnion pin, which are 28" in diameter and 7'-11" long, is 1,315 tons. The Burnside Bridge remains one of the heaviest lift bridges in the United States, weighing more than twice the bascule spans of the Morrison Bridge, built two decades later.[5] The lift is operated via a span drive powered by two electric motors, each with double extended shafts.[6]

Two steel deck truss side spans, each 268 feet long, flank the operable bascule. The side span trusses are double-intersection Warren trusses, also called lattice trusses, subdivided by vertical posts that turn from the top chords to the diagonal intersections, making them sub-verticals. This is an extremely rare truss type in Oregon that includes among its few examples the Ross Island and Sellwood bridges, both in Portland and both designed by Gustav Lindenthal as part of the same contract as the Burnside.

The Burnside Bridge has 34 approach spans, including 19 concrete spans on the west side and seven concrete and eight steel spans on the east side. The approach spans link the bridge itself to surface streets on either bank of the river and, while clearly related to the Burnside Bridge itself, are not considered to be part of the main bridge structure. According to the HAER documentation the total length of the Burnside Bridge between the abutment walls, without the approach spans, is 788 feet.[7]

Two octagonal "operators" towers are located at the upriver interior piers, flanking the bascule span. Designed by the Portland architectural firm of Houghtaling and Dougan,[8] the towers are highly detailed

[3] The choice of bascule design had played a major role in the construction of Portland's first bascule span, the Broadway Bridge, completed in 1913. There two variations on the Strauss design had lost out to the less-expensive Rall Bascule form, largely due to patent costs. Although the Rall Bascule has proven reliable at the Broadway Bridge, the Strauss design eventually became the most common bascule form.

[4] A. B. Reeve's rare publication, *The Story of Strauss Bridges*, published by the Strauss Bascule Bridge Company (Chicago, June 1925:41), as cited in Wood Wortman (2000:9).

[5] Wood Wortman, 2006:47.

[6] A trunnion is a large shaft or axle that carries moving parts in a movable bridge. In the Burnside Bridge, trunnions are found in the hinge assemblies that support the bascule spans as they open and close.

[7] Sharon Wood Wortman. *Burnside Bridge, HAER No. OR-101,* 2000.

[8] Chester A. Houghtaling (1882–1940) held Oregon Architect License No. 12 and arrived in Portland in 1913, joining Luther Lee Dougan (1883–1983, License No. 9) in an architectural partnership that continued until 1925. The Houghtaling and Dougan firm

compared to the remainder of the structure, rising from corbelled supports off the bridge piers. Finned bracket-like castings, each finely detailed at top and bottom, form a series of three arched openings on either side of a scroll-decorated cantilevered bracket below the tower itself. Perhaps as the result of engineer Lindenthal's comments on the appearance of Portland's bridges (that they were the ugliest he had seen), the Burnside Bridge has been described as the first of the Willamette River bridges to benefit from the impact of the so-called City Beautiful Movement, an effort in the early decades of the 20th century to improve the appearance of the American urban environment.[9]

Each of the two eight-sided tower rooms are 11 feet across, with the entry quadrant devoted to a stairwell. The west tower is the only one that is actually used for bridge operation, containing the control mechanisms for raising and lowering the bascule leaves. A small bathroom is located to the left of the main entry door with a circular stairwell leading to the uppermost and lowermost levels. The east tower is similarly configured but without a bathroom, and is essentially an empty shell that is used for storage. At the upper floor a doorway leads from each tower to an outside walkway, about 15 feet long and 5 feet wide. Other architectural treatment of the Burnside Bridge includes an ornate spindle type balustrade concrete railing, with cast-steel and cast-iron ornamental railing on the center span. The ornamental tile of the tower roofs is original and was supplied by Gladding McBean & Company of Auburn, Washington.

A solid brass name plate is located outside and to the left of the west tower entrance, in a recessed area made especially for the plate. The nameplate is 3 feet high and 2.5 feet wide. It lists the names of the Board of Multnomah County Commissioners and the district attorney who were in office at the time the bridge was opened. Following the commissioners are the names of all the engineers, including Gustav Lindenthal (engineer-in-chief), Hedrick and Kremers (consulting engineers), Hans Rode (assistant engineer), M. E. Reed (principal assistant engineer), and John Zoos (assistant engineer). Also named are the bridge contractors and primary subcontractors.

The Burnside Bridge, despite it tumultuous history and shared design between Hedrick, Kremers, and then Lindenthal, has served the Portland area well. Perhaps consciously, as an antidote to Lindenthal's 1924 dismal assessment of the appearance of Portland's then-existing bridges, the Burnside Bridge is considered to be among Portland's most attractive.[10]

Modifications Since 1926

When the Burnside Bridge was completed, the structural steel elements were painted with a primer coat of red lead and graphite, followed by two coats of light gray, as per the modification made by Lindenthal to reduce heat absorption. It is unknown when the present scheme of yellow/beige, red and green was applied to the operator towers but in the 1990s both were repainted in what have become the bridge's trademark colors for those features. Before that, the bridge superstructure was painted a yellow ochre to harmonize with its surroundings, as stated by Lewis Crutcher, the architect hired by the county in the 1960s to provide assistance in choosing colors for the Burnside and other Willamette River bridges. Some references indicate that prior to 1966 the Burnside Bridge superstructure was either entirely, or trimmed, in green.

---

designed many Portland landmarks, including the Elks Club, Washington High School, and the Medical Arts Building. Richard Ritz, in his book *Architects of Oregon*, credits Houghtaling as the architectural designer of both the Ross Island and Burnside bridges. Houghtaling and Dougan were hired to improve the appearance of the Burnside Bridge design, signing a contract with the county on July 31. (Ritz, 2002:193–94).

[9] Sharon Wood Wortman. *Burnside Bridge, HAER No. OR-101,* 2000:27.

[10] Dwight Smith, James B. Norman, and Pieter T. Dykman. *Historic Highway Bridges of Oregon* (2nd, Revised Ed.). Portland, OR: Oregon Historical Society Press, 1986:114.

There have been a series of changes to the Burnside's sidewalk railings since 1928, most affecting the connections between the bridge approaches and the adjacent buildings that flank them. The stairs at the bridge's west end were modified in 1994–95, part of changes in the connections between S.W. Naito Parkway and the Saturday Market that occurs beneath the approaches. These changes have also been the result of modifications from the proximity of the MAX Light Rail line that runs on First Street in this area.

When the Burnside Bridge was opened, it boasted six traffic lanes—four for motor vehicles and two to serve Portland's trolley system. Eventually the trolley lanes were converted to vehicle usage. In 1995 the bridge was re-striped, with one lane converted to bicycle use, leaving five vehicle lanes, three eastbound and two west. Other changes, as detailed in the HAER documentation, include modest alteration and repair to the towers, periodic resurfacing of the wear surface as is typical of all roadways, and repairs to the bridge mechanism and the electrical system that controls it. None of the documented changes appear to have made a major impact on the key elements of the original design.

In the mid-1990s Burnside Street was declared a Regional Emergency Transportation Route, making the bridge the one non-freeway span identified for use by public agencies to route emergency vehicles, equipment and supplies across the Willamette River in the event of an earthquake or other disaster. In 2002 the Burnside's approaches were given a new driving surface and the bridge underwent a was seismic retrofit. The Phase 1 seismic upgrade added steel connections between the deck sections. Both the approach surface and seismic work were designed by David Evans & Associates, with Mowat serving as the primary contractor for the $2.1 million project. Two years later Heil Electric replaced outdated wiring, removing early equipment and replacing it with modern touch-control screens, as well as creating the opportunity for remote control of the bridge mechanism. In 2007 the concrete deck on Burnside's lift span was removed and replaced, along with repair and replacement of portions of the bridge mechanism. This included the replacement of one of the original leaf hinges (the east). This work was designed by OBEC Consulting Engineers, with Hardesty & Hanover, Mechanical Engineers. The contractor for this $9 million project was Advanced American Construction.

Bridge lights were added to the Burnside by the Willamette Light Brigade, a private citizen's group that has commissioned lighting designs for most of downtown's bridges. Portland artist Bill Will was selected to design the lighting concept for the Burnside. "Will's design highlights the graceful, expansive spans of this central bridge with floodlights on the central piers and the bridge truss, the central draw structure (bascule) and the bridge's most notable, appealing, architectural features, its two cantilevered turreted operators houses."[11]

Summary

The Burnside Bridge opened in 1926. Hedrick and Kremers completed the original design for Multnomah County. After a politically charged recall election of commissioners directly related to the bridge program, the county invited noted bridge engineer Gustav Lindenthal to oversee the Burnside's construction and serve as its engineer-in-chief. Primary contractor for the bridge was the Pacific Bridge Company, a long-time Portland-based firm. Multnomah County financed the bridge's construction and has since owned and maintained it.

The Burnside Bridge is one of three draw or bascule bridges across the Willamette River in Portland, one of two Strauss Bascules, and is among the largest of that type of bascule ever built. Beyond its size, the design is notable as the first such span with a concrete road surface, a major element in accounting for the fact that the Burnside Bridge is considered one of the heaviest bascule bridges in the world.

[11] www.lightthebridges.org

Largely remaining “as built,” with modifications limited to the repair and maintenance of the wear surfaces, electrical and control equipment, and other minor changes, the Burnside Bridge retains very high integrity with respect to its original design and appearance as completed in May 1928. The Burnside Bridge effectively conveys its original character and the associations that make it significant.

Burnside Bridge
Name of Property

Multnomah Co., OR
County and State

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- **X** A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ___ B Property is associated with the lives of persons significant in our past.
- **X** C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ___ D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply)

Property is:

- ___ A owed by a religious institution or used for religious purposes.
- ___ B removed from its original location.
- ___ C a birthplace or grave.
- ___ D a cemetery.
- ___ E a reconstructed building, object, or structure.
- ___ F a commemorative property.
- ___ G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)

COMMUNITY PLANNING & DEVELOPMENT
TRANSPORTATION
ENGINEERING

Period of Significance

1926–73 (Criterion A)
1926 (Criterion C)

Significant Dates

May 28, 1926, Opened

Significant Person
(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

Ira G. Kendrick/Robert E. Kremers
Gustav Lindenthal, New York City, NY
Joseph B. Strauss (Bascule), Chicago
Lindstrom & Feigenson, Booth & Pomeroy

Period of Significance (justification)

The period of significance begins with the completion of the Burnside Bridge in 1926 in response to the increasing need for cross-river transportation and ends in 1973, spanning the entire context for the Multiple Property Document entitled Willamette Highway River Bridges of Portland, Oregon.

Criteria Considerations (explanation, if necessary) N/A

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance and applicable criteria.)

The Burnside Bridge, a major element in Portland's multi-bridge bond-funded bridge expansion in the mid-1920s, was completed in May 1926 and is intrinsically linked to the city's long history of transportation and development. Built following a political controversy over its original contract, the span was designed by Ira G. Hedrick and Robert E. Kremers and then, after their removal from the project, modified and constructed under the direction of Gustav Lindenthal. The Burnside Bridge, located at the center point of Portland's character-defining geographic street quadrants, remains a key element in the city and continues to function as originally intended, with high integrity with respect to its original design. One of the busiest bridges, in terms of vehicular traffic, in Oregon, the Burnside Bridge was declared a "Regional Emergency Transportation Route" in the mid-1990s.[12]

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

Nominated under the framework of the Willamette River Highway Bridges MPD and built within the middle period of bridge development as defined by that document, the Burnside Bridge is of statewide significance under National Register eligibility Criterion A, Community Planning and Development and Transportation, for its association with the development of Portland and its transportation network between its construction in 1926 and the close of the period of significance for the MPD document in 1973. The Burnside Bridge is also of statewide significance under Criterion C, Engineering, as one of the heaviest bascule bridges in the United States and as the first such bridge to rely upon a concrete deck surface for its movable span. The Burnside Bridge meets all the general and the necessary specific registration requirements for listing under the MPD.

Developmental history/additional historic context information (if appropriate)

Bridges in Portland

Portland's first trans-Willamette Bridge—the first Morrison Bridge—was a wooden swing-span that was built by private interests in 1887 to connect Portland with the separate incorporated city of East Portland. Four years later those two communities along with Albina, another independent city in what is now North Portland, voted resoundingly to consolidate, forming a united municipality lining both sides of the Willamette River. Six more bridges followed, including vehicular and railroad spans. Some of these had to be replaced due to poor construction between 1891 and 1910, when the Hawthorne Bridge was completed.

The important shipping and port traffic on the Willamette made each of the trans-Willamette crossings controversial, and direct and easy vehicular connection competed with the need to maintain an open river channel. The city's earliest spans were uniformly of swing-span design, meaning a portion of the bridge could rotate on a fixed center pier, turning 90 degrees from its normal cross-river orientation to run parallel with the water flow, creating two open channels on either side of the "swing" or pivoting span. Aside from the mechanical issues inherent in the operation of swing spans during this era, the slow speed at which the bridges could be opened or closed proved irksome to both vehicular and river traffic. The latter was additionally constrained by the comparatively narrow passage afforded on either side of the central pivot point. For the Hawthorne Bridge, completed in 1910, the city chose a new form of movable bridge, a vertical-lift span. When the Oregon Railroad and Navigation Company determined to replace its 1888 Steel Bridge, it too decided to use the vertical lift technology as developed and patented by the firm of Waddell & Harrington of

[12] Wood Wortman, Sharon, with Ed Wortman. *The Portland Bridge Book* (3rd Edition). Portland, OR: Urban Adventure Press, 2006:49.

Kansas City, Missouri, who developed and held most of the patents on that bridge type. Portland's first effort to create a new, rather than a replacement, bridge connection across the river was the Broadway Bridge, Portland's first draw or bascule bridge.[13]

With the completion of the Broadway (1913) and rebuilt Steel (1912) bridges, Portland's bridge system remained unchanged for over a decade, a period in which automobile use in the city increased dramatically. While reliance on Portland's laudable trolley system remained strong, demand for improved capacity across the Willamette River led to renewed interest in bridge construction that found voice at the ballot box, in the form of bond requests, by the early 1920s.

Designers

The initial design for the Burnside Bridge was the work of Ira G. Hedrick and Robert E. Kremers, a hurried partnership put together by Kremers (1882–1962), the former Multnomah County bridge engineer, who joined with the far more experienced Hedrick (1868–1937), of Kansas City, Missouri, to secure the contract from Multnomah County following voter passage of a funding bond in March 1924. Irregularities in the award of that contract culminated with the May 1924 recall of several members of the board of commissioners, as described in more detail below, and ultimately led to the replacement of Hedrick and Kremers as the engineers of the Burnside project with Gustav Lindenthal, arguably the "Dean" of American bridge engineering during much of the early 20th century.[14] While generally retaining the Hedrick and Kremers plan, Lindenthal made several modifications to the design, and then served as the chief engineer, managing the construction of the bridge under contract to the county. The Burnside Bridge's movable span is a double-leaf bascule designed by the Strauss Bascule Company under the direction of Joseph Strauss, who designed and held the patent on this particular form of bascule. Although best known as the overall designer of the Golden Gate Bridge spanning the entrance to the San Francisco Bay, Strauss initially gained fame for his work in the design of movable bridges, perfecting the "Strauss-type" of bascule while working as an assistant in the firm of Ralph Modjeski, another prominent early-20th century engineer.[15]

Hedrick, brought to Portland to provide skill and large-bridge design background to the firm of Hedrick and Kremers, was an experienced bridge designer, having been the partner of John Alexander Low Waddell in the firm of Waddell and Hedrick from 1899 to 1907 before setting off on his own.[16] While responsible for railroad bridges in the Midwest and the design of the Boston Elevated Railroad, Hedrick is primarily of note in the Northwest for his short and ill-fated partnership with Kremers.[17] Kremers, who had come to Portland in 1911,

[13] Prior to the construction of the Broadway Bridge, Portland's trans-Willamette bridges were all swing spans, in which a middle section of the bridge pivoted 90 degrees on a fixed point, swinging from a cross-river orientation to an inline river one, creating two channels for ship passage on either side. The main concern with swing spans, aside from mechanical and structural issues, was the narrowness of the created channel, each by definition only half the width of opening, separated by central pier. These narrow channels, seen as obstacles to navigation, led Portland to seek other, more modern, movable bridge forms such as the vertical lift or bascule, each of which, when open, created a much larger opportunity for ship passage.

[14] Lindenthal (1850–1935), based in New York City, was responsible for the design of many significant bridge spans over the course of his long career. His reputation was further enhanced by the work of his former assistants, Othmar Ammann and David Steinman, each of whom became hugely influential bridge designers in their own right. Steinman, for example designed Portland's St. Johns Bridge, among many other notable works.

[15] Modjeski designed Portland's Broadway Bridge, as well as several of the railroad bridges over the Columbia River, during a long and productive career.

[16] Waddell, another highly regarded 19th century bridge engineer, was based in Kansas City, Missouri. He is best remembered today as one the key designers of the vertical lift bridge, as well as work on Portland's Interstate, Hawthorne and Steel bridges, all done as head of the firm Waddell & Harrington.

[17] The HAER documentation on the Burnside Bridge identifies Hedricks' partner as Robert C. Kremers; however, this may be an error. Numerous period accounts in the *Oregonian,* both before and after the Burnside Bridge controversy, document "E" as the correct middle initial. Robert E. Kremers, born in Michigan and married to Jessie F. Kremers, is listed in the 1920 U.S. Census as resident of Multnomah County, Oregon, along with the couple's three young daughters and an elderly woman, presumed to be his mother-in-law.

worked as a building inspector and then as city engineer and chief of the highway and bridge department for the city. In 1923, with funding for a new Burnside Bridge passed by the voters, the Board of Multnomah County Commissioners hired Kremers to oversee its ambitious bridge program.[18] Kremers resigned his position with the city to take the job. When his lack of experience was raised as an issue, Kremers formed a quick partnership with Ira G. Hedrick, a respected and experienced bridge designer who relocated to Portland from Kansas for the work. The new firm finished its designs in June 1923. After voters passed another funding measure in March 1924 to pay for the street-level connections, bids were opened for the bridge construction on April 1, 1924, April Fool's Day. As it worked out, the day was perhaps prescient, since almost immediately irregularities in the bid process created a huge controversy that ended with Kremers' indictment and the recall of three members of the board of commissioners (see below for more detail).

In the wake of the recall, the new and continuing members of the board of commissioners turned to Gustav Lindenthal of New York to oversee the bridge program, including the Burnside Bridge as well as the Ross Island and Sellwood spans that had been designed and funded concurrently. Lindenthal was a much-needed "big gun," a highly skilled and experienced designer who could step into the process mid-stream in the wake of the bridge scandal, would be both capable and willing to produce three long-span bridges simultaneously in short order, and could do so within a budget already reduced by the irregularities of the process. Lindenthal was almost universally praised as the perfect man for the job.

Gustav Lindenthal, born in what is now the Czech Republic, was an entirely self-taught engineer. He began building bridges in Austria and Switzerland before emigrating to the United States in 1874. Shortly after his arrival, Lindenthal established himself as a major engineering talent, quickly garnering clients and projects of note. In 1902 he was appointed commissioner of New York bridges and in that capacity designed the Manhattan Bridge. In 1916 he designed the Hells Gate Bridge, probably his most famous work, which at the time of its completion was the longest and heaviest steel bridge in the world. Lindenthal later served in various capacities for the City of New York and played an important role in designing multiple spans of note in that city. By the time Lindenthal was asked to come to Portland and sort through the work of Hedrick and Kremers, he was among the most respected bridge designers in the world. Lindenthal died in 1935, at eighty-five years of age. The three Portland bridges with which he is strongly connected—the Ross Island and Sellwood (both which are credited as Lindenthal designs), in addition to the Burnside—were the last major spans of Lindenthal's long and distinguished career.

Construction Process

Lindenthal signed a contract with Multnomah County on June 4, 1924, and his first order of business was to review the work of Hedrick and Kremers and make recommendations on their designs for the Burnside, Ross Island, and Sellwood bridges. Rumors flew as to whether Lindenthal would find anything of value in the existing plans, with many expecting "drastic" changes. "Aside from claiming Portland's existing bridges were the ugliest he has seen anywhere,…Dr. Lindenthal has been close-mouthed about his findings"[19] Ultimately Lindenthal proposed entirely new designs for both the Ross Island and the Sellwood. For the Burnside, where the project involved replacing an existing and much-used span rather than creating an entirely new river crossing, Lindenthal largely accepted the Hedrick and Kremers plan.

On July 9, 1924, Hedrick and Kremers released their rights in all previous designs for the Burnside Bridge in return for a payment of $25,000. Two days later, Lindenthal was hired to finalize the plans for the Burnside, as well as to completely redesign the Ross Island and Sellwood spans. Within two weeks, on Lindenthal's

[18] In addition to the Burnside Bridge, voters also approved construction of the Ross Island Bridge and laid the groundwork for what would become the Sellwood Bridge between 1923–24.

[19] *Oregonian*, 5-July-1924, 9:5–7.

recommendation, the county contracted with Pacific Bridge Company to build the new Burnside Bridge. Lindenthal's team reviewed and finalized the Burnside Bridge designs, still relying upon Hedrick and Kremers' work, and even re-hiring many of the same designers that the earlier partnership had employed on the project. The changes Lindenthal did make focused upon redesigning the bridge foundations and the addition of an architect to incorporate a more pleasing appearance in the design. Lindenthal noted, with regard to the original plans, that "…the squatty massiveness of the piers in the middle of the river will appear in silhouette strangely out of proportion to the framed steel trusses resting on them."[20] Lindenthal also elected to change the paint color of the bridge, from Hedrick and Kremers' choice of black, to a lighter grey tone that would reduce the heat absorption of the steel and diminish the potential for differential temperature stresses.

Upon Lindenthal's recommendation, the county awarded the main contract for constructing the Burnside Bridge to the Pacific Bridge Company on July 21, 1924. Demolition of the old Burnside span began a week later.[21] Pacific Bridge was an established and highly regarded bridge contractor in the northwest. It began in California in 1869 and relocated to Portland in 1880. Seven years later it was the primary contractor for the first Morrison Bridge, the first trans-Willamette crossing in Portland. Charles F. Swigert, Pacific Bridge's president, worked with the company in California, came with the owners to Portland, and then purchased the firm in 1886, giving him more than four decades of bridge-building experience at the start of the Burnside project. Pacific Bridge's bid on the Burnside, at $2,390,173, was the only bid received that was below Lindenthal's estimate. Two other contractors were also involved with the construction of the Burnside Bridge. Lindstrom and Feigenson built the approach spans, while NePage McKenny was responsible for the lighting. At Lindenthal's suggestion, Houghtaling and Dougan, a Portland-based architectural firm, was brought into the project for design advice.

In November 1924, the final designs for the bridge's superstructure were sufficiently completed that Lindenthal's resident engineer-in-chief, Hans H. Rode, released a new drawing of the span to the public, a full-page-width drawing that was published in the *Oregonian* under a headline reading "Engineer's New Drawing of Burnside Bridge Gives Idea of How Impressive Span Will Look When Draw is Open for Ships."[22] Construction of the river piers for the Burnside Bridge relied upon four timber cribs or caissons that were built on shore and then towed and sunk into the river and sealed at the edges to allow underwater excavation. These were large structures—two were 78 × 68 feet in area and more than 80 feet tall. The two smaller caissons for the abutment piers were 68 × 36 feet in area and 55 feet tall. The first concrete was placed in the lower portion of one of the larger caissons in late November 1925. "In just eight days, with the work going on night and day, the job was completed." Work on the rest of the massive piers continued throughout the winter and into the spring.[23]

By April 1925, piling was in place to support the east end of the temporary supports for the overhead girders at the bridge's east end and work on the east-end pier was nearly done.[24] The next day Engineer Rode reported that the Burnside project was progressing on schedule, expressing the expectation that the work could be completed in about sixteen months. "Steel, he said, was being laid on the east approach and the bascule spans."[25] Some 3,900 tons of bridge steel arrived in Portland aboard the *Atlantic*, in the service of the Argonaut Line, "…which arrived in the harbor last night…from Baltimore…via the Panama Canal."[26]

[20] Commissioners Journals, "Burnside and Ross Island Bridges," 11-July-1924, as cited in Wood Wortman (2000:47).
[21] Portions of the 1894 Burnside Bridge were salvaged and reused as fixed spans in other area locations, a typical practice during this period. The 300-foot-long eastern span was placed at Dodge Park, spanning the Sandy River and the 240-foot-long west truss spans the Bull Run River, near the former site of Roslyn Lake (see Smith et al, 1989:118).
[22] *Oregonian,* 23-November-1924,24:1–8.
[23] *Oregonian*, 31-December-1924, 44:1–8.
[24] *Oregonian*, 24-April-1925, 11:2.
[25] *Oregonian*, 25-April-1925, 8:3.
[26] *Oregonian*, 6-May-1925, 22:1, 13-May-1925, 7:3–4.

In early June 1925, the main machinery for the bascule spans arrived from Pennsylvania, also shipped through the Panama Canal. It would be stored off-site until construction progress on the spans was sufficient for the mechanism to be installed at the bridge.[27] Soon thereafter the original plan to build the Burnside's Strauss bascule in the vertical, or open, position, often done to allow easy river navigation during construction, was abandoned. The span would instead be constructed on the "cantilever" principle, working outward toward the center of the two leaves, across the opening, in the "closed" position.[28]

By the end of August, the main counterweights for both the east and west bascule leaves had been placed and, once they had fully cured, steelwork on the bascule spans themselves would begin. "Mr. M. E. Read, Assistant County Bridge Engineer, explained that it was necessary to have the counterweights in place so that the steel of the bascule span might be supported as additional weight is added over the stream."[29] By November 1925, the bascule spans were essentially finished and moved to the upright position. Lindenthal's team was to have the bridge completed by May 1926.[30]

At the end of April 1926, work on the Burnside Bridge was reported as being 99 percent complete, and the plans for the formal dedication of the span were underway. The dedication festivities were held May 28, 1926, culminating with the bridge being opened to public traffic at 7:00 that evening.[31]

The Burnside Bridge

As early as 1920 the Oregon State Highway Department, having evaluated the capacity of Portland's existing bridges, reported that the original Burnside Bridge, built in 1894, was in dire need of replacement. The report suggested that the 1894 Burnside Bridge, a steel through-truss with a central swing span, was notably slow to open or close. The report concluded that the existing bridge was structurally inadequate and deemed its replacement "urgent."[32] It called for a new Burnside Bridge across the Willamette River at the location of the existing structure. However, it "considered that the new bridge could not be constructed in less than five years, allowing for bond issues."[33]

Supporters of bridge improvements attempted to pass a funding bond in late 1920 but that effort stalled when the noted bridge engineer John Lyle Harrington found the Burnside's structural condition more positive than had the state. Nevertheless, generous county voters approved $5.5 million for funding for a new span in November 1922, then expected to be a concrete span designed by Oregon's State Bridge Engineer Conde McCullough. While the bond passed, in March 1923 the county retained the services of Robert Kremers, an engineer of considerably less experience than McCullough and without any experience whatsoever in so-called "Large Bridge" construction, to design the Burnside project. In response to public outcry over this choice of engineer, Kremers immediately brought in Ira G. Hedrick as his partner.[34]

The typical political machinations that characterize much of Portland's bridge development during the early 20th century delayed final funding for the Burnside for more than a year until March 1924, when City of

[27] *Oregonian,* 9-June-1925, 7:1.
[28] *Oregonian*, 21-June-1925, 16:3–5.
[29] *Oregonian,* 30-August-1925, 16:2–5.
[30] *Oregonian*, 20-November-1925, 23:2.
[31] *Oregonian,* 28-May-1926:1
[32] *Oregonian,* 29-June-1920.
[33] *Oregonian*, 20-April-1920, 12:1.
[34] Hedrick and Kremers, in addition to the Burnside Bridge, were also to be responsible for the design of entirely new bridges at Ross Island and Sellwood, although at this time many thought portions of the 1894 Burnside Bridge could be reworked for installation at the Sellwood location.

Portland voters approved funds to build the approach spans for a new Burnside Bridge.[35] Less than a month later the county awarded contracts to local firms to build three new bridges, including the Burnside span, for a total cost of more than $5 million dollars. Work on the new Burnside Bridge, at $2.8 million, was awarded to J. H. Tillman Company. The contract for the Ross Island Bridge was awarded to Parker and Banfield, while the Sellwood Bridge was to be built by the Union Bridge Company. These films were not entirely independent. According to the *Oregonian*,

> The three firms…were linked into an inseparable triumvirate. It was a condition of their bidding that the three tenders on the three structures must be accepted or rejected, or else all of them must be rejected. This brought about a situation where the commissioners were confronted by two bids on the Burnside Bridge, one of which was, on the face of things, $480,000 higher than the other. The Tillman bid was the higher and that of the Pacific Bridge Company, a Portland firm, was the lower of the two.[36]

Since there was only a single bid on either the Sellwood or the Ross Island, the commissioners were presented with something of a dilemma, given the all-or-nothing structure of the winning bids. With all the various elements, add-ons, and stipulations, the calculated difference between the winning Tillman bid for the Burnside project and the losing bid from Pacific Bridge was $529,827. The county, in accepting the Tillman bid, as part of the all-or-nothing proposal, was going to end up paying more than 20 percent above the lower bid.

As might be expected, Pacific Bridge Company, with a long tradition of bridge building in the Pacific Northwest, having presented a qualified bid that was over half a million dollars lower in cost than the winner, was not pleased with the county's decision. On April 4, 1924, Pacific Bridge filed an injunction suit, designed to throw out the contract award, claiming the process violated state law in several ways and the all-or-nothing agreement between the three successful companies was "tantamount to collusion."[37]

Soon, however, the possible collusion among the winning bidders took a backseat to a far more explosive issue: the charge of possible wrong-doing by the commissioners themselves. While details were initially scarce, it soon became apparent that there was some concern the commissioners were involved with kick-backs and similar "pay-to-play" dealings that skewed their judgment. So serious were the claims that within a week of the bid announcement on the bridge contracts that a "group of responsible business and professional men" began to prepare a recall campaign to remove the commissioners from office.[38] At a special Saturday meeting, the commissioners, responding to the growing public outcry over the situation, unanimously voted to withdraw the contracts. This was in no small part precipitated by the county attorney's blunt statement that he could not defend the multiple irregularities of the Tillman contract against the Pacific Bridge Company complaint and would not do so. "I will not defend the contracts awarded by the commissioners, this is a suit for which they must get special counsel," said Mr. Myers, the District Attorney.[39] It was the *Oregonian's* opinion that, "In withdrawing their signatures from the bridge contracts, which are rightly condemned by public opinion, the county commissioners chose the only reasonable way out of a serious dilemma."[40]

[35] Bridge funding during this era was complicated by numerous political and financial factors, most notably that the county was responsible for the bridges across the river (subject to review by both Army Corps of Engineers and the Port of Portland), whereas the City of Portland was responsible for funding the approach spans that connected any trans-Willamette bridge to the city street grid. This required at least two different bond elections, which had to be coordinated in order to build the structure as designed. Minor modifications in alignment, costs, or design could, at least in theory, void an earlier approval.

[36] *Oregonian*, 1-April-1924, 1:1.

[37] *Oregonian*, 4-April-1924, 1:8.

[38] *Oregonian*, 5-April-1924, 8:3.

[39] *Oregonian*, 6-April-1924, 1:1.

[40] *Oregonian*, 7-April-1924, 8:1.

But even as the commissioners attempted to backtrack, questions about the irregular contract procedures grew. The governor of Oregon, Walter Pierce, directed State Attorney General Van Winkle to launch an investigation of the issue to determine if any laws had been broken and the issue consumed the interest of the local press, with daily stories of new findings amid growing public anger. The recall process continued and by mid-month, less than three weeks after the contracts had first been awarded and just two weeks since a group had formed to discuss the possibility, more than 18,000 voters signed recall petitions on commissioners Walker, Rudeen, and Rankin. Fully 14 percent of all registered voters in the county, 500 more than were required, had already signed the petition, far more than were needed to assure an election on the recall question.

Stories of corruption circulated through the community. By April 20, 1924, charges of impropriety against the commissioners and the inexperienced bridge engineer Robert E. Kremers surfaced, claiming that irregularities regarding insurance bonds and collusion between the commissioners, Kremers, and the bidders were involved in the unusual award of bridge work. In mid-May, five days before the scheduled recall election, the Grand Jury announced an inquiry into Commissioners Walker and Rudeen, as well as Kremers. Early reports suggested that the engineering contract, estimated to amount to $200,000 had been "hawked about for $50,000," accounting for the fact that Kremers had not won the job solely on merit, especially in the face of "formidable competition."[41] According to the *Oregonian*, "It is alleged, in the grand jury findings, that the two officials, on January 26, 1923, corruptly received from Robert E. Kremers a "certain gift, gratuity and valuable consideration…of the value of more than $10,000 of lawful money."[42]

After a week of testimony, no charges had been issued, and somewhat irregularly none were made prior to the recall election. The issue would, instead, be resolved at the ballot box before the grand jury finished its work. Commissioners Walker, Rankin, and Rudeen were recalled by a wide margin, replaced by three new members specifically proposed by those incensed over the bridge contract process. A few days later, based upon what were widely considered technicalities, the three recalled commissioners, as well as Kremers, were acquitted by the grand jury. Most review of the situation left little doubt that the board of commissioners, while determined innocent, had not operated in the public's best interest. According to E. Kimbark MacColl, "A sordid tale of influence pedaling was related (at the trial), depicting each commissioner holding out his hand for some kind of pay-off, but the state had a difficult time establishing any direct connections involving bribery."[43]

The newly elected commissioners pledged to provide a new, and presumably unquestionable, process that would get these much needed bridges under construction. They quickly retained Gustav Lindenthal to review the status of the plans prepared by Hedrick and the now-disgraced Kremers. As detailed in Section 7, Lindenthal elected to design new structures for Ross Island and Sellwood but, with only minor changes, decided to follow the Hedrick and Kremers plans for the Burnside Bridge. By July 1924, the county was again ready to award a contract for the construction of a new Burnside Bridge. Pacific Bridge, the wronged party in the earlier contract award, this time prevailed with a bid of $2,390,173, the same amount it had bid in April. It is not clear if the Tillman Company participated in the bidding process.

Construction of the Burnside Bridge proceeded within the 500-working-day completion schedule that had been a key stipulation in the Pacific Bridge Company proposal. Public excitement over the city's large-scale bridge expansion, with three major spans across the Willamette under construction during 1925, was somewhat whetted in December when the new Sellwood Bridge opened. In early January 1926, looking forward to the

[41] *Oregonian*, 1-May-1924, 8:1
[42] *Oregonian,* 11-May-1924, 1:1
[43] MacColl, E. Kimbark. *The Growth of a City: Power and Politics in Portland, Oregon 1915–1950*. Portland, OR: The Georgian Press, 1979:265.

completion of the Burnside and Ross Island bridges, J. P. Newell, a consulting engineer hired to review Portland's bridge network, expected that the county's bridge-building program would virtually double existing capacity and relieve traffic congestion, especially during the morning and afternoon commute, for the next ten years. The *Oregonian* speculated that "Portland's bridge equipment, as it will stand at the beginning of 1927, will be sufficient to handle the city's traffic until 1936. Then, it is estimated, the city will have a population of 518,000 with peak traffic of 219,000 vehicles, requiring an hourly capacity of 17,500."[44]

By late April 1926, plans were being readied for the formal opening of the new Burnside Bridge. Concurrently, the 1926 Rose Festival was canceled due to the construction of a new Multnomah Stadium, the venue where many of its events were hosted.[45] W. C. Culbertson, the executive secretary of the general committee charged with planning the bridge events, along with individuals associated with the Portland Rose Festival, saw the opening of the Burnside Bridge as an appropriate substitute for the cancelled festival. The committee determined to make the event a statewide celebration, inviting marching bands from all over Oregon to participate, as well as the "Prunarians" from Vancouver, Washington.[46] In mid-May, the *Oregonian* announced,

> Friday May 28 has been set as the date of the official opening. Erwin A. Taft, county commissioner, is chairman of the committee in charge of the celebration plans, which will include a parade on each side of the river, to meet at the bridge center, and a day of general festivity….Engineers say that the Burnside Bridge is one of the most beautiful and most practicable, from the viewpoint of utility, west of the Mississippi River.[47]

The formal opening ceremonies began at noon, with a luncheon in the Crystal Room of the Benson Hotel, held by the City Club of Portland. The two parades started at 2:00, with the marine parade, through the open bascule spans, commencing at 2:30. As the span was closed, leaders from both east and west Portland, along with the assembled crowds, met at the bridge's center and the Burnside Bridge was formally dedicated to the public. Radio station KEX broadcast the events, and mill and factory whistles around the city were blown in near unison between 2:30 and 2:35. After a marine regatta and motorboat racing, and a display by Portland's fire boat fleet, Amedee M. Smith, chair of the board of commissioners, formally opened the bridge to public traffic at 7:00. It was the *Oregonian's* opinion that,

> The opening of the new Burnside bridge will doubtless constitute one of those memorable and significant events from which citizens delight to reckon the flight of time. And, indeed, the completion of this fine modern structure, beautiful in design and modern in every detail, is of considerable moment to the city. The bridge is not only the greatest of the three bridges approved by the voters, when the urgency of improved trans-river facilities was presented to them, but is one of the finest bridges of the country and represent a most admirable achievement in construction...
>
> Some day, when the river is clean and all its frontage sightly, all the bridges will be beautiful and the Willamette will flow like a song through the heart of the city. That, if it pleases you, is one of the promises the new bridge extends.[48]

Registration Requirements

[44] *Oregonian,* 8-January-1926, 1:4
[45] Weisensee, http://www.oregonencyclopedia.org/entry/view/portland_rose_festival/, visited 23-Nov-2010.
[46] *Oregonian,* 27-April-1926, 1:3
[47] *Oregonian*, 16-May-1926, 24:1
[48] *Oregonian*, 28-May-1926, 12:2

The Burnside Bridge is being nominated to the National Register under the Willamette River Highway Bridges of Portland, Oregon, Multiple Property Document (MPD). Evaluation of the bridge within the registration requirements of Section F of that document finds the following:

The Burnside Bridge meets the Minimum Eligibility Requirements:

- The bridge is located on the Willamette River, at River Mile 12.4, entirely within the City of Portland, Multnomah County, Oregon.
- The bridge's primary function is to provide highway/vehicular needs within the city's transportation system although it also provides for bike and pedestrian use as well as auto, truck, and bus traffic. Historically the bridge was also an element of Portland's street railway system.
- The bridge is owned and maintained by Multnomah County. The county authorized and funded the construction of the bridge and has been responsible for its maintenance since completion.
- The bridge was completed in May 1926 and so meets the temporal context of the MPD. It is the only movable span within the four bridges constructed during the middle, auto-related, subgroup (1925–31) of that context.
- Additionally, the Burnside Bridge is intrinsically connected to the history of Portland and Multnomah County through its role in the 1926 "bridge scandal" that culminated in the recall election of three commissioners and their replacement with a new slate of candidates devoted to completing the county's bridge program.

The Burnside Bridge meets the Minimum Integrity Requirements:

- The bridge remains on its original piers and its original alignment.
- The bridge remains substantially "as-built" with very high integrity with respect to its original steel and concrete elements. Identified modifications, including serial replacement of the wear surface, maintenance and upgrade to the bascule mechanism and control, and modifications to lane alignments to allow for increased bike and pedestrian use, do not in any serious fashion alter the overall integrity and historic character of the span.
- The bridge retains a very high level of integrity in feeling and association, effectively relating its original character, design and appearance so as to convey its relationship to the history of Portland, Oregon.

As a result of the above, the Burnside Bridge meets the eligibility requirements for listing on the National Register under Criterion A, as defined by the Willamette River Highway Bridges of Portland MPD.

In addition to eligibility under Criterion A, the Burnside Bridge is considered to have significance under Criterion C. Evaluation under the registration requirements finds the following:

- The Burnside Bridge is a large and historically significant example of the Strauss-type bascule, as designed and patented by Joseph B. Strauss.
- The Burnside Bridge is the first-known Strauss bascule to utilize a concrete deck surface, adding to its impressive scale and making the bridge among the heaviest such structures ever erected.
- The Burnside Bridge was among the last major works of noted bridge engineer Gustav Lindenthal.
- The Burnside Bridge retains a high degree of integrity in both design and workmanship and, as such, is a exemplar of its type, representing one of the four major patented bascule forms that were developed during the late 19th and early 20th centuries.

As a result of the above, the Burnside Bridge—in addition to its already demonstrated eligibility under Criterion A, and relationship to the history of Portland and Multnomah County—is also identified as having design and

technological significance related to the Strauss-type bascule, maintaining sufficient integrity to accurately relate that association, as required for eligibility under National Register Criterion C.

9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets)

ASCE (American Society of Civil Engineers). Joseph Baermann Strauss (http://www.asce.org/PPLContent.aspx?id=2147487405), visited 25-August-2010.

DeLony, Eric. *Landmark American Bridges*. Boston, MA: Little, Brown and Company, 1993.

Lansing, Jewell. *Portland: People, Politics and Power 1851–2001*. Corvallis, OR: Oregon State University Press, 2003–2005.

MacColl, E. Kimbark. *The Growth of a City: Power and Politics in Portland, Oregon 1915–1950*. Portland, OR: The Georgian Press, 1979.

Oregonian. Misc. issues as cited by date/page in text.

Oregon Journal. Misc. issues as cited by date/page in text.

Plowden, David. *Bridges: The Spans of North America*. New York, NY: The Viking Press, 1974.

Ritz, Richard Ellison. *Architects of Oregon*. Portland, OR: Lair Hill Publishing, 2002.

Smith, Dwight, James B. Norman and Pieter T. Dykman. *Historic Highway Bridges of Oregon* (2nd, Revised Ed.). Portland, OR: Oregon Historical Society Press, 1986.

Willamette Light Brigade. http://beta.lightthebridges.org/legacy-burnside.htm (visited 22-November-2010).

Wood Wortman, Sharon. *Burnside Bridge, Historic American Engineering Record [HAER No. OR-101].* Prepared as part of the Willamette River Bridges Recording Project, HAER/Oregon Department of Transportation, in cooperation with Multnomah County, July 2000.

Wood Wortman, Sharon, with Ed Wortman. *The Portland Bridge Book* (3rd Edition). Portland, OR: Urban Adventure Press, 2006.

Previous documentation on file (NPS):

- [X] preliminary determination of individual listing (36 CFR 67 has been requested
- [ ] previously listed in the National Register
- [ ] previously determined eligible by the National Register
- [ ] designated a National Historic Landmark
- [ ] recorded by Historic American Buildings Survey #_____
- [X] recorded by Historic American Engineering Record # OR-101

Primary location of additional data:

- [ ] State Historic Preservation Office
- [X] Other State agency
- [ ] Federal agency
- [X] Local government
- [ ] University
- [ ] Other

Name of repository: OR Dept of Trans, Multnomah Cty

Historic Resources Survey Number (if assigned): N/A

Burnside Bridge | Multnomah Co., OR
Name of Property | County and State

10. Geographical Data

Acreage of Property Less than one acre

UTM References
(Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing		Zone	Easting	Northing
1	10	526080	5040915	3			
2				4			

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet)

The nominated area includes the entire Burnside Bridge structure, above the river bed and between the approach spans that connect the structure to the road system on either side of the Willamette River.

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet)

The nominated area encompasses the entirety of the historic Burnside Bridge, while excluding the adjacent non-contributing public streets and structures.

11. Form Prepared By

name/title George Kramer, M.S., Senior Presrevation Specialist
organization Heritage Research Associates, Inc. date
street & number 1997 Garden Ave telephone (541) 482-9504 / (541) 485-0454
city or town Eugene state OR zip code 97403

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps: A USGS map (7.5 or 15 minute series) indicating the property's location.
A Sketch map for historic districts and properties having large acreage or numerous resources.

Photographs: Representative **black and white photographs** of the property.

Additional items: (Check with the SHPO or FPO for any additional items)

Burnside Bridge | Multnomah Co., OR
Name of Property | County and State

Photographs:

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map.

Name of Property: Burnside Bridge

City or Vicinity: Portland

County: Multnomah, Co. **State:** OR

Photographer: George Kramer
Heritage Research Associates, Inc. (Eugene, OR)

Date Photographed: April 2011

Photo 1 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0001)
Upstream view, looking NE, from west side bike path

Photo 2 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0002)
Upstream view, looking NW, from Vera Katz Esplande

Photo 3 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0003)
Downstream view, looking west, toward downtown Portland, from Vera Katz Esplande

Photo 4 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0004)
Downstream view, Operator's tower

Photo 5 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0005)
Upstream view, looking south, showing pier and bascule detail (Morrison Bridge in distance)

Photo 6 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0006)
Downstream view, showing bascule in operation (Steel bridge in distance)

Property Owner

name Multnomah County Bridge Section, attn: Ian Cannon, County Bridge Service Manager
street & number 1403 SE Water Street telephone (503) 988-3757
city or town Portland state OR zip code 97214

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).
Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, PO Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

Documents

Figure 1: Project Location Map, ODOT, City of Portland Quadrangle, Annotated

Figure 2: USGS, Portland 7.5 Quadrangle, 1990, Annotated

Figure 3: Burnside Bridge Boundary Map

Figure 4: Five Bridges Over the Willamette River, looking north, circa 1927
author's collection (Burnside Bridge at image center)

Figure 5: Aerial View of Portland, circa 1927, author's collection, Burnside Bridge at image center

Figure 6: Postcard Image, circa 1927, author's collection

Figure 7: Postcard Image, circa 1927, author's collection

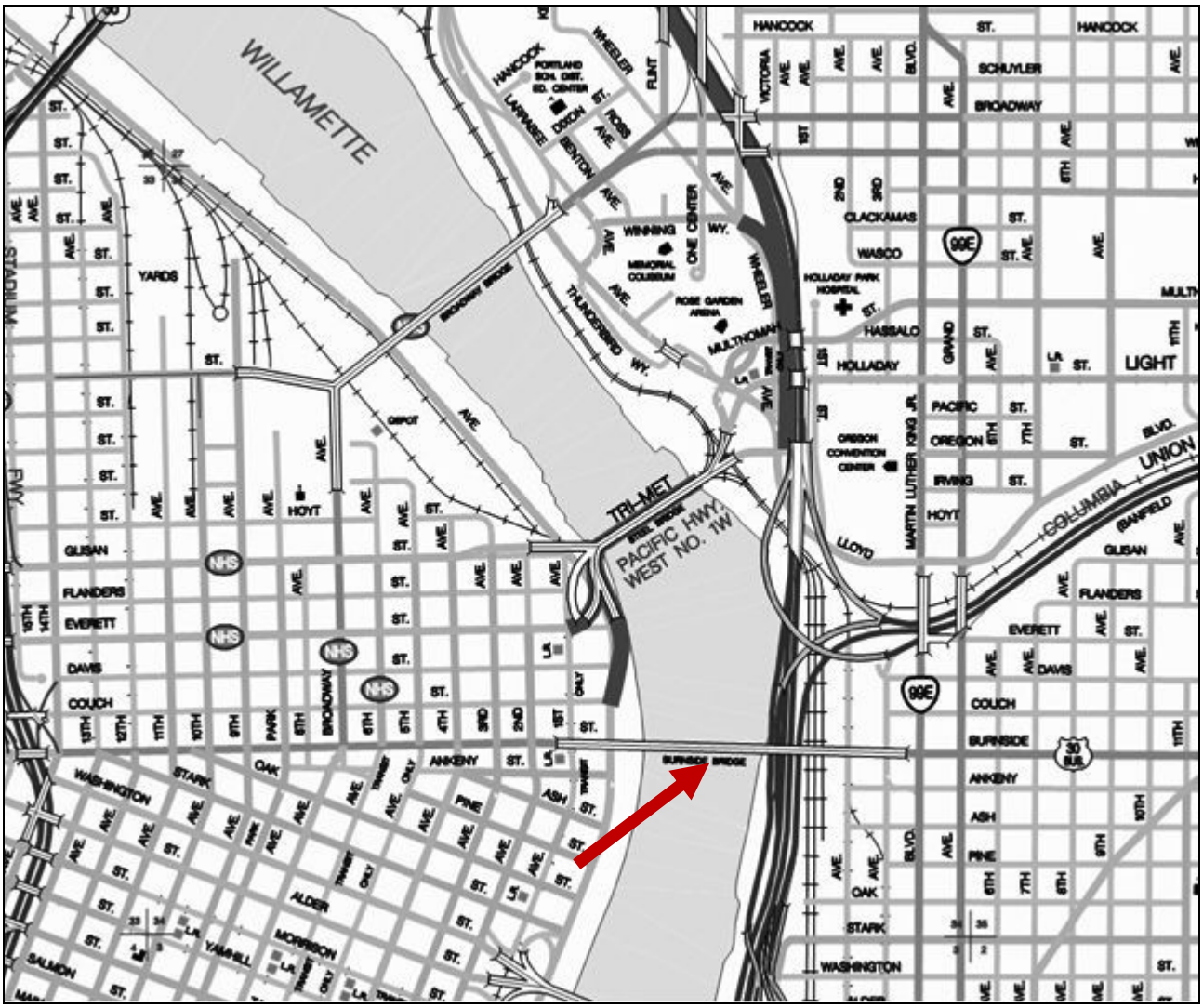
Figure 8: Postcard Image, circa 1950, author's collection

Figure 9: Postcard Image, circa 1927, looking West, author's collection

Figure 10: Postcard Image, circa 1927, author's collection

Figure 11: Postcard Image, looking West, circa 1940, author's collection

Figure 1: Project Location Map, ODOT, City of Portland Quadrangle, Subject property indicated with arrow



United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Burnside Bridge	Name of Property
Multnomah Co., OR	County and State
Willamette River Highway Bridges of Portland, Oregon	Name of multiple listing (if applicable)

Section number Documents Page 24

Figure 2: USGS, Portland 7.5 Quadrangle, 1990, Subject property indicated with arrow

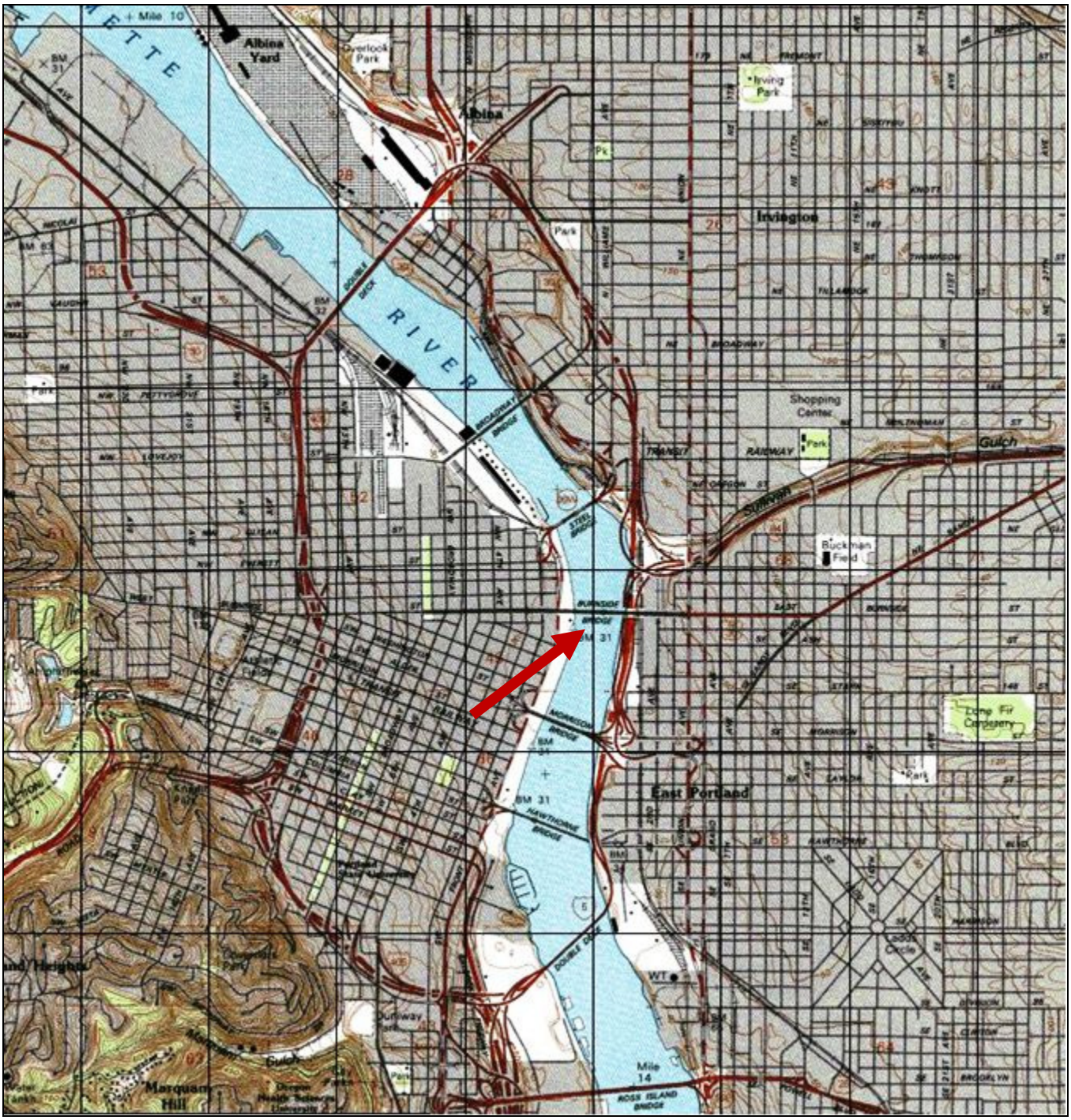


Figure 3: Burnside Bridge Boundary Map, Boundary marked with black line

Figure 4: Five Bridges Over the Willamette River, looking north, circa 1927
author's collection (Burnside Bridge at image center)

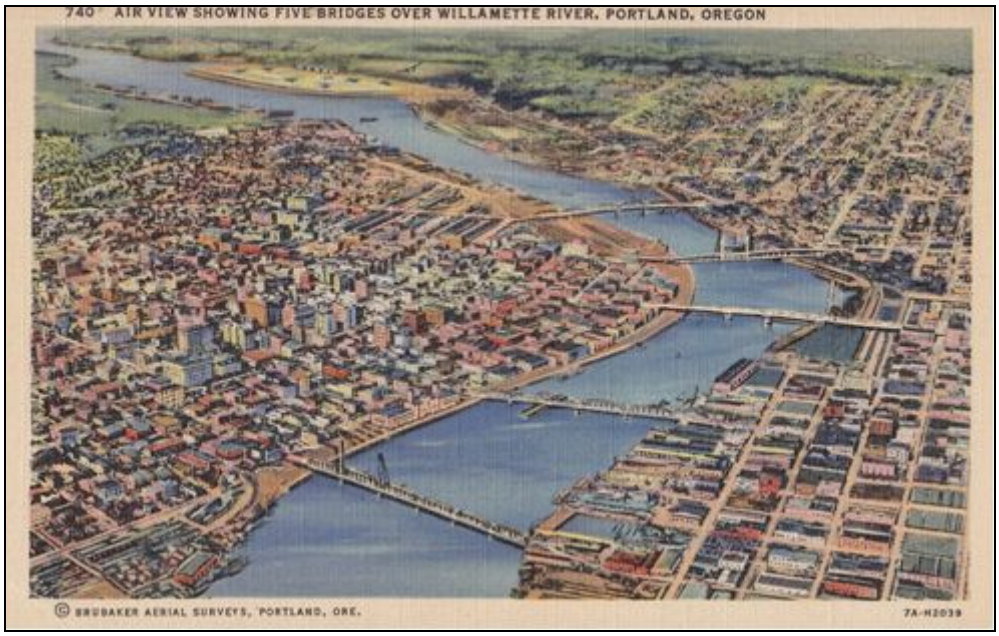


Figure 5: Aerial View of Portland, circa 1927, author's collection, Burnside Bridge at image center

Figure 6: Postcard Image, circa 1927, author's collection

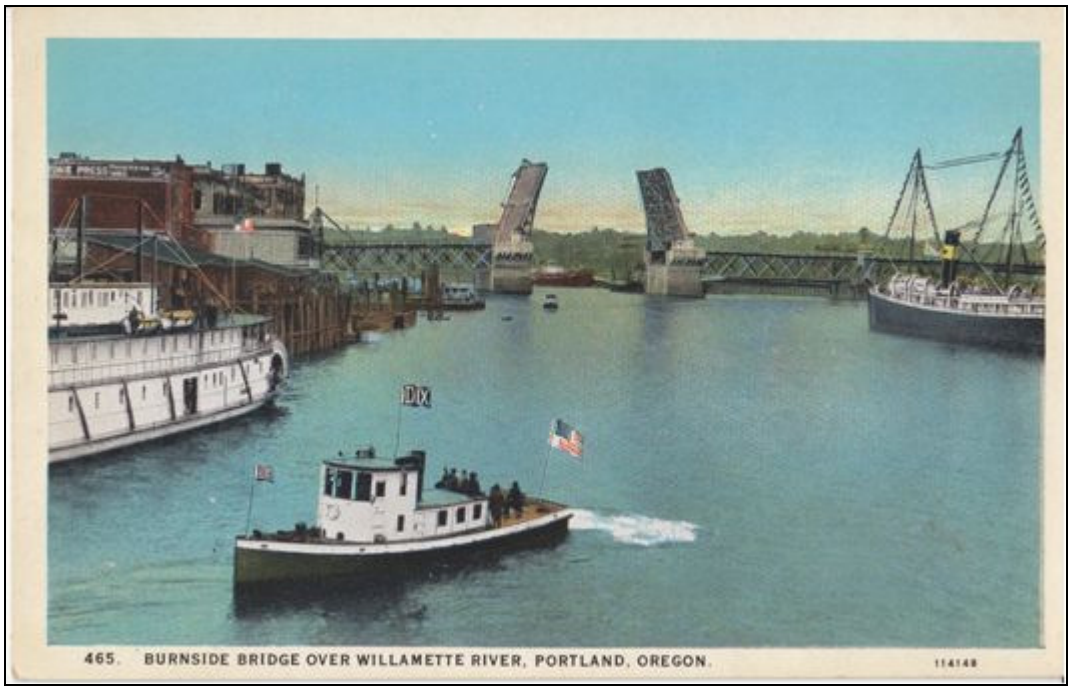


Figure 7: Postcard Image, circa 1927, author's collection

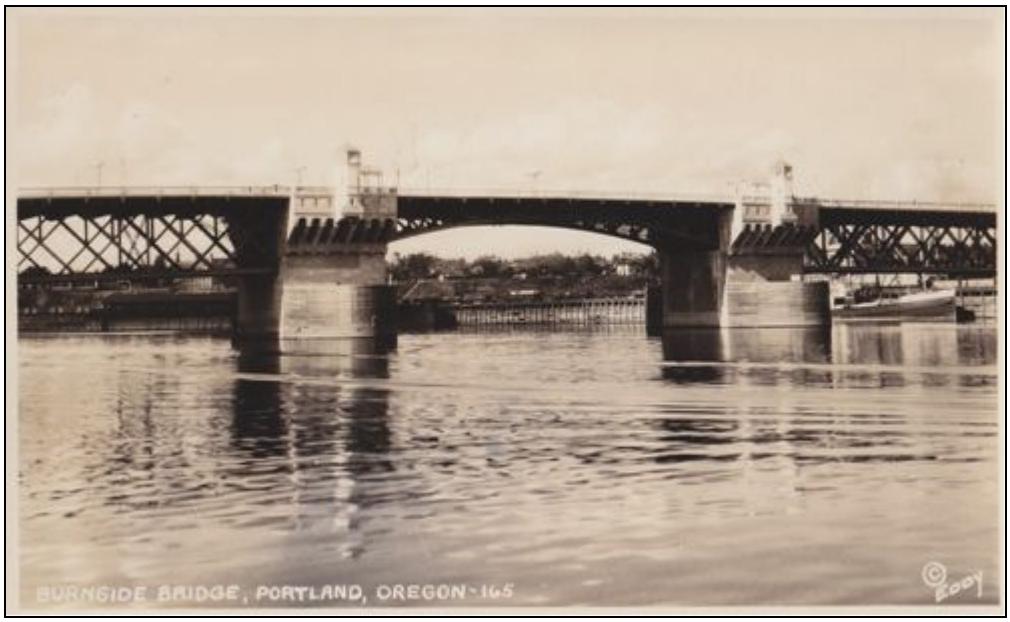


Figure 8: Postcard Image, circa 1950, author's collection

Figure 9: Postcard Image, circa 1927, looking West, author's collection

Figure 10: Postcard Image, circa 1927, author's collection

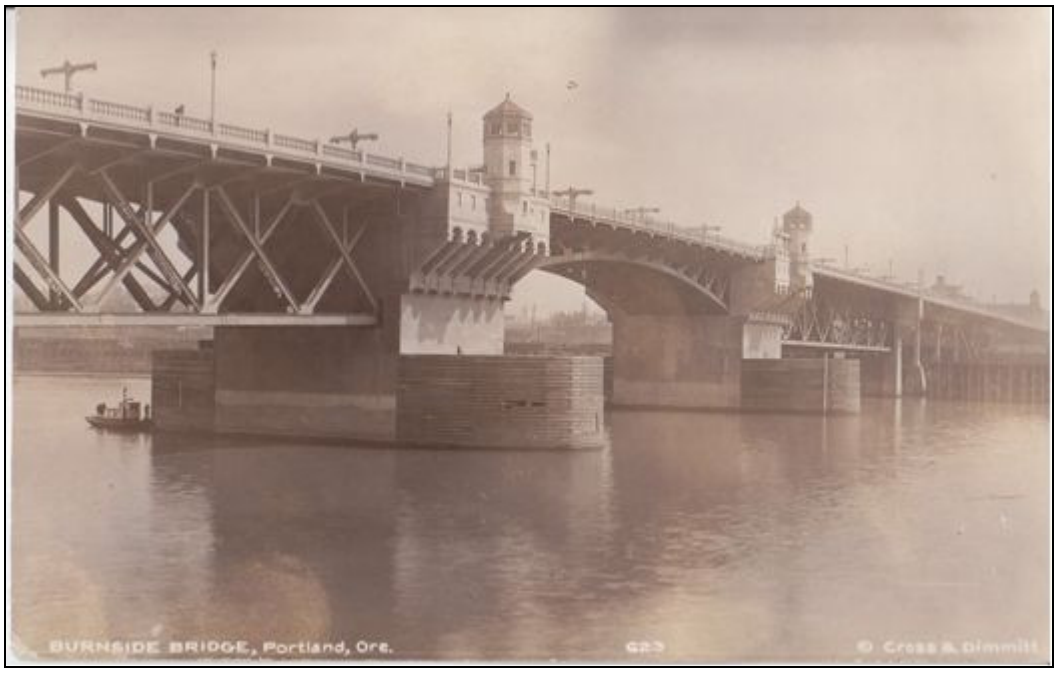


Figure 11: Postcard Image, looking West, circa 1940, author's collection

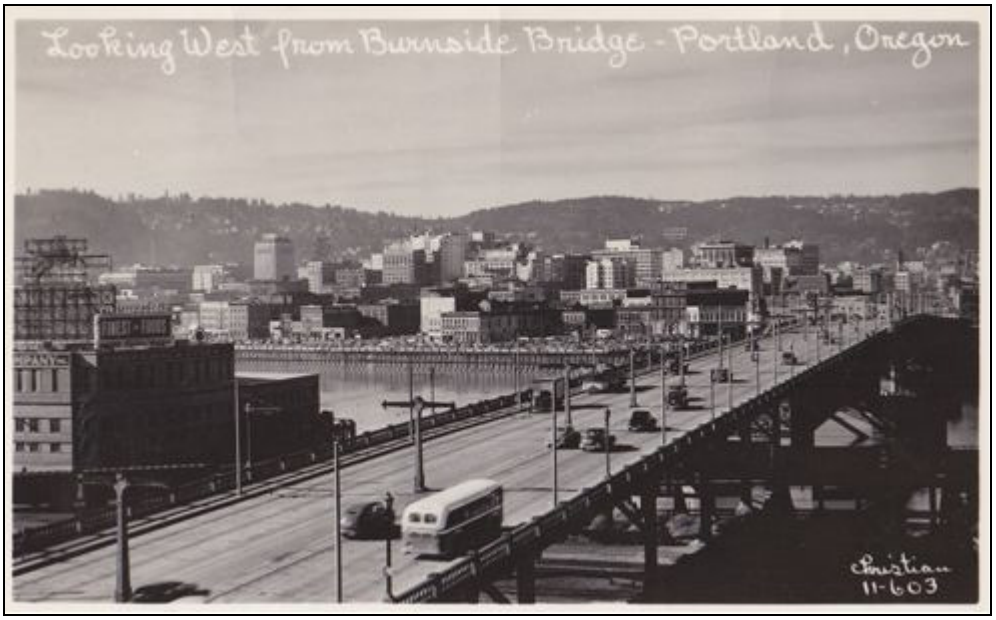


Photo 1 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0001)
Upstream view, looking NE, from west side bike path

Photo 2 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0002)
Upstream view, looking NW, from Vera Katz Esplande

Photo 3 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0003)
Downstream view, looking west, toward downtown Portland, from Vera Katz Esplande

Photo 4 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0004)
Downstream view, Operator's tower

Photo 5 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0005)
Upstream view, looking south, showing pier and bascule detail (Morrison Bridge in distance)

Photo 6 of 6: (OR_MultnomahCounty_WillametteHwyBridgesMPD_BurnsideBridge_0006)
Downstream view, showing bascule in operation (Steel bridge in distance)