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Van Buren Bridge

*Interpretive topics and themes*

*Draft 1*

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Overview

This document is a first draft of suggested themes and topics for interpretive exhibits near the new Van Buren Street Bridge.

Some exhibits will accompany sections of the original bridge, a hand-operated swing-span bridge that played a role in the development of Corvallis. These will tell the story of the historic bridge and explain how it operated. Other exhibits, placed near the Willamette River, will share tidbits about the river’s flood cycles and wildlife.

These themes and topics are selected to satisfy II.1.c and II.1.e of the MOA between ODOT, SHPO, and FHWA (ODOT KEY NO. 20688, FEDERAL AID NO. S210(022)PE, SHPO Case No 19-0502):

*The [pony truss] interpretive station will serve as an area to present interpretive displays about the history of Corvallis, the Willamette River, historic river crossings, site 35LIN842, and the Van Buren Bridge, at a minimum (II.1.c).*

*…an interpretive station incorporating parts of the bridge associated with opening the swing span, including gears, rollers, reduced-size key replica, and related rods and platforms (II.1.e).*

As sources for this initial list of themes and topics we’ve drawn from:

* HAER document No. OR-191 “Van Buren Bridge (Willamette Bridge)
* “Van Buren Bridge—1913” Set of diagrams provided by Kirsten Straus at ODOT
* “The Willamette River—a Window Into the Past” River guide by Patricia Benner

Van Buren Bridge History

Topic 1: Ferry days

**Themes:**

*Even before the planned town of Marysville changed its name to Corvallis, crossing the Willamette River was a primary concern.*

*Technological and financial limitations made a bridge from the planned city to the town of Orleans unfeasible, so a cable ferry service was included in the original town plat map. By 1858 the ferry was a central feature of daily life in Corvallis.*

**Content:**

* Types of river traffic in that era: Why were ferries needed?
* The town of Orleans: where it was, date of founding, size, demographics
* Why this spot? Advantages and disadvantages of a ferry crossing here
* What was the ferry ride like?
* The 1862 flood that destroyed Orleans—how did it change the way Corvallis developed, and what became of that site?

**Supporting content ideas:**

* 1907 photo of the ferry, showing sheep and draft animals in a pen. Ask the visitor: Would you ride a ferry like this if it were here today?
* Ferry statistics from *Corvallis Times,* November 8 1902 (HAER Report: “In September 1902 the ferry made 2,150 trips across the river carrying 4,753 vehicles and their teams and 6,759 people on those vehicles, plus an additional 4,136 pedestrians and cyclists. Total numbers were comparable in October, but with fewer pedestrians, probably because “Hop picking greatly augmented the travel by footmen during two weeks of September.””)
* Plat map of Orleans, showing how ferry privileges were clearly featured, illustrating the importance of the crossing to the planned community.
* 1850s lithographs showing the crossing site
* Advertisement for Orleans in the 1858 Oregon *Statesman*
* McCormick & Pownall’s Map of Oregon 1859 (State Library of Oregon, located in Rm 7 Maps, or Douglas County Museum)
* Illustration of “Blumhart’s Ferry” from Patricia Brennan’s River Guide

Van Buren Bridge History

Topic 2: Citizens demand a bridge

**Themes:**

*As neighboring communities built bridges across the Willamette in the late 19th century, the ferry service at Corvallis became overburdened as the population of city increased. People, teams of draft animals, and livestock faced lengthy waits to cross the river. This cost Corvallisites time and money.*

*As the 20th century dawned, citizens demanded their own bridge across the Willamette. A project that large required the approval and efforts of citizens, local government, county officials and the state.*

**Content:**

*Timeline*

* Mid-19th century: Founding of Marysville/Corvallis and early discussions about a bridge
* Late 19th century: swift growth of Corvallis, infrastructure needs increase
* 1892: Construction of the Albany Bridge tempts Corvallis businesses to relocate as ferry becomes overurdened
* 1910: Benton County submits preliminary bridge plans and specifications to the War Department
* 1911: Both houses of the Oregon legislature pass HB 345 authorizing construction of a bridge across the Willamette at Corvallis
* 1911: A citizens’ commission selects Van Buren Street as the western foot of the bridge
* 1912: Corvallis voters approve a $2500 bridge bond measure with an overwhelming 529 yes to 51 no votes. Side note: This was the first election in Corvallis when women were legally permitted to vote.

**Supporting content ideas:**

* Quote or reproduce article from *Corvallis Times,* November 8 1902 “What the Figures Are: Many People Cross the Corvallis Ferry”: “…residents on both sides of the river complained about crowding and long waits to cross.”
* Ask visitors: What would be some advantages of traveling across the river on a ferry? What are advantages of crossing on a bridge? What transportation technologies were changing in the first decade of the 1900s that might make a bridge more desirable? (rise of automobile)
* Quotes from newspaper articles/editorials from the *Daily Gazette-Times* about the growing demand for a bridge to replace the ferry

Van Buren Bridge History

Topic 3: Bridging the centuries

**Themes:**

*Just like today, building a bridge in the early 20th century required money, people, materials, technology, and time.*

*The design of the swing span reflected changes in bridge construction from the late 19th century to the early 20th century.*

**Content:**

* The Van Buren Street Bridge was one of the last bridges built on the West Coast that employed pin connected trusses and a human-powered swing span.
* The design also called for modern rivets, making it a unique hybrid of traditional and modern bridge building techniques.
* Construction of the bridge
	+ Process
	+ Experience of the workers (unlike many other large projects of this sort, there were no fatalities during the construction)
* The bridge was completed in 1913, with traffic opening in February
* The grand opening (March 1913)
* The fate of the ferry: the crossing site was moved upstream, and eventually the ferry was discontinued.

**Supporting content ideas:**

* Profile of the original bridge designer/engineer, and contractor: George A. Sears, Coast Bridge Company.
* Photos of construction
* Diagram of the bridge showing its 19th and 20th century features
* Quotes from people involved in construction (possible source: Benton County Historical Society)
* Photos, illustrations, and/or quotes about the “Bridge Day” celebration: parade, opening ceremony, race to cross the bridge first

Van Buren Bridge History

Topic 5: Challenges and changes

**Themes:**

*The Van Buren Bridge was built for a particular type of river traffic. But the the types of watercraft that traveled the Willamette changed, reducing the need for the swing span. Lack of use caused problems for the complicated mechanism.*

*At the end of the Great Depression, responsibility for maintaining the Van Buren Street Bridge was turned over to ODOT at the request of Benton County officials.*

**Content:**

* To ensure proper operation, the mechanism needed to be opened at least once a month, but in reality it was only opened once or twice a year.
* There were other problems—for example high winds could blow the swing span open.
* Infrequent opening made each use more difficult. Eventually the bridge was opened once a year for practice, which could take an hour even with multiple men turning the mechanism.
* Overview of ODOT—its responsibilities, and why it took responsibility for the bridge.
* The last opening of the bridge was in 1960–it was a spectator event.

**Supporting content ideas:**

* Illustration showing the swing span in use, with a tall boat passing through (e.g. the Army Corps snag boat *Monticello* in 1952)
* Quote from bridge engineer J.A.L. Waddell about maintenance of swing-span mechanisms
* Story (and illustration?) of George Way being stranded when the swing span was blown open in 1914
* Newspaper headlines, articles, photos about the final swing span operations

Van Buren Bridge History

Topic 6: Time takes a toll

**Themes:**

*Through the mid-20th century, increased traffic and changing vehicles took their toll on the bridge, and the forces of nature added to the challenges.*

*By the 1980s it was becoming clear that the Van Buren Bridge might not be a good fit for the 21st century, and a decision was made to replace it.*

**Content:**

* The bridge was too narrow to accommodate increasing vehicle sizes, and the bridge was repeatedly damaged by large vehicles, leading to lengthy closures.
* The 1962 Columbus Day storm damaged the bridge, putting it out of commission for two months.
* To help address increased traffic, a second crossing at Harrison Street was built in 1964, and traffic on Van Buren was restricted to eastbound traffic only
* Ever taller, wider, and heavier vehicles continued to damage the bridge in the 70s.
* The swing span was declared inoperable in the 1980s. The decision was made that it wasn’t worth repairing the outdated system, and plans were put in place to take it down and build a new bridge.

**Supporting content ideas:**

* Articles and photos about problems, such as the time two trucks got jammed (1961)
* Photo of the bridge after the 1962 storm, with large trees across the road
* Photo from the 1974 accident that damaged the bridge and closed it for months.

Van Buren Bridge History

Topic 7: Preserving the bridge

**Themes:**

*As mitigation for removing the historic Van Buren Bridge, ODOT sponsored a project to document the old bridge’s history and tell its story to the public.*

*Everyone wanted to highlight the importance of the swing span mechanism, which was one of the last in-situ manual moveable bridge mechanisms at a major crossing on the West Coast.*

*The components of the swing span were carefully removed rather than destroyed [and you can see them here at this park].*

**Content:**

* The designation of the bridge as a historical object.
* How the old bridge was documented (the Recording Project)
* How the various historical components (pony truss, swing span mechanism, key) were removed, and where they were taken. Emphasize that they are now cultural resources that are being cared for so they can be enjoyed by future generations.

**Supporting content ideas:**

* Photos of the demolition of the bridge and the preservation of the components
* Diagram of bridge showing which components were preserved
* Acknowledgement of the agencies and organizations involved in the Recording Project (NPS/HAER, U of O, Benton County Historical Society, and others)

Van Buren Bridge History

Topic 8: Discovering the past

**Themes:**

*As part of decommissioning the Van Buren Bridge, the areas at either end of the crossing was investigated by archeologists. Their work uncovered artifacts that give us a glimpse at the past.*

**Content:**

* Construction projects often require mitigation work to avoid disturbing potentially important sites. ODOT frequently works with internal and external experts in the fields of architectural preservation, archeology, and history to document and protect sites important to all Oregonians.
* In 2022 a team from the University of Oregon Museum of Natural and Cultural History found the site of an informal landfill on the east side of the bridge, used by the community between 1910 and 1913.
* The team found items that tell stories about the material culture of that time

**Supporting content ideas:**

* Photos of the excavation
* Photos of artifacts, with captions about how they were identified and what they say about the people who used them

Van Buren Bridge: the turning mechanism

**Themes:**

*The old Van Buren Bridge had a central span that could be rotated, allowing tall boats to pass. The set of gears and rollers you see here is the heart of the swing mechanism.*

*The mechanism was designed so that the 250-foot swing span could be rotated by hand.*

**Content:**

* Brief history/context of swing span bridges
* How the Van Buren Bridge mechanism worked:
	+ Central span, incorporating this turning mechanism, was balanced on a turntable, on a cylindrical pier in the middle of the river.
	+ Operators fitted the socket of a metal “turning key” over one of two gear shafts (high speed and low speed) in the turning mechanism, then cranked the long crossbar around by walking in circles.
	+ The gear train transferred the rotation of the key to turning the 23-foot-diameter ring gear.
	+ The ring gear moved the swing span turntable, which rode on tapered cast-iron rollers in a cast-iron track ring below.

**Supporting content ideas:**

* QR-linked animation of how the bridge worked
* Diagram of the swing span, with detail inset of the turning mechanism
* Photo or illustration of bridge operators opening the Van Buren Bridge.
* Illustrations or photos of other swing-span bridges (there’s nice discussion of this style and its advantages and disadvantages at https://thebridgeguy.org/2021/07/swing-bridges-long-before-the-swinging-1860s/ - this would need fact-checking by bridge engineers.)

Willamette River Natural History

Topic 1: Floodplain forest

**Themes:**

*Floodplain forest is an important—and threatened—natural habitat found along the Willamette.*

**Content:**

* Surveys of the 1850s described this area as “timbered with maple, ash, fir, alder, willow and cottonwood” with a “Dense under-growth of vine maple, hazel, briers, &c.”
* Regular overflows from the river allowed fish to forage in new areas and left behind sediments that refreshed and fertilized the soils in the floodplain.
* To the Kalapuya, these floods were part of the rhythm of life.
* Colonization, agriculture, dams, and other modern developments have reduced the extent of floodplain forest along the Willamette, but restoration work is being done.

**Supporting content ideas:**

* Map showing the extent of the forest along this stretch of river in 1852, with “You Are Here” (see Patricia Brennan’s *River Guide*.)
* Artistic reconstruction of the forest, showing Kalapuya as part of the ecosystem.
* Map showing current extent of floodplain forest along this stretch of river. Show restoration sites?
* Photos of native tree species of floodplains—encourage visitors to look for these species in the park.

Willamette River Natural History

Topic 2: Historic floods

**Themes:**

*Floods are part of the Willamette River’s natural cycle.*

*In the 1800s and 1900s, floods challenged modern settlement and development in the floodplain, leading to the construction of dams.*

**Content:**

* Floods are natural on the Willamette—yearly, multi-year and multi-decade cycles in weather patterns cause regular flooding.
* The Kalapuya shaped their lives around flood cycles.
* After colonization, floods threatened growing industrial, agricultural, and infrastructure.
* Since the early 1940s, dams have helped regulate the flow of the river and reduce the size of floods in many areas.
* Although dams can help control high waters, they don’t entirely prevent floods. Large floods still occur.

**Supporting content ideas:**

* Photos and stories of major floods in the 20th century, both before and after the dams were constructed—focusing on impacts in the Corvallis area (see Patricia Brennan’s *River Guide)*
* Map of Willamette Valley Project dams, with dates of construction
* Statistics for the impact of dams (e.g. in Patricia Brennan’s *River Guide*)

Willamette River Natural History

Topic 3: Freshwater mussels

**Themes:**

*Beneath the Willamette’s rippling surface, nestled in the gravel of the river bed, lives an extraordinary native bivalve—the western pearlshell mussel.*

**Content:**

* Life cycle of the mussel: embryos develop inside the female. She releases them as glochidia (drifting lavae). The glochidia attach to the gills of salmonid fish (salmon, trout), which carry them to new habitats up and down the river. Eventually they settle and burrow into the sediment.
* As filter feeders, they help clean the water by filtering out bacteria, algae, excess nutrients, etc.
* They live for many decades, and some may live for over 100 years
* They’re sensitive to changes in the water and can be indicators of water quality
* They’re food for native birds, mammals, and fish
* Traditional Kalapuya uses

**Supporting content ideas:**

* Diagram of the life cycle
* Photos of individual mussels, and of mussel beds
* Range map

Willamette River Natural History

Topic 4: River birds

**Themes:**

*The Willamette has many ways of providing food for native birds.*

**Content:**

* Fish-eating birds, such as osprey, bald eagles, and kingfishers, can catch their prey in the main river.
* Herons haunt the shallows and side channels to catch fish, amphibians, and reptiles.
* Shorebirds such as sandpipers and plovers probe the mud and gravels at the river’s edge for worms and other invertebrates.
* Swallows swoop through the open air above the river, catching emerging aquatic insects such as mayflies.

**Supporting content ideas:**

* Photos or illustrations of featured birds.