

BRIDGES OF PACIFIC COUNTY

A century-long legacy of linking communities together

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PACIFIC COUNTY, Wash. — In 1916, French and German troops waged the longest battle of the Great War. In Russia, nobles poisoned, then shot, then beat, and then drowned Grigory Rasputin, a notoriously wicked Russian “Holy-man” and adviser to the royal family who proved to be surprisingly difficult to murder. A half a world away, Mexican revolutionary Pancho Villa fought U.S. soldiers for control of modern-day New Mexico.

In quiet Pacific County, it was also a momentous year, but in a very different way: It was the year workers built the first of the 60 bridges that still serve contemporary Pacific County residents.

In a state known for its many waterways, bridges play an essential, if unsung role in the economy. They connect isolated local communities to one another, and to the rest of the state. They bring resources and opportunity to locals by making modern commerce possible. But they also demand a lot of resources: Local and state public works officials must carefully monitor aging infrastructure to prevent calamities like the May 2013 Skagit River Bridge collapse.

There is never enough money or manpower to do major repairs or replacements, so officials engage in a never-ending balancing-act, trying to keep all 60 bridges maintained, so they never need to be replaced.

Era of stout bridges

During a two-year period from 1916 to 1917, workers poured four concrete “Luten Arch” bridges, spanning the Willapa River, Fern Creek, Green Creek and the slough on modern-day Heckard Road. With graceful, curving spanners, those bridges were a bellwether of the era’s rapidly evolving technologies and culture. An Indiana engineer and professor named Daniel B. Luten had designed and patented a new type of concrete bridge with a curving arch and flat upper deck. Luten-Arch bridges were popular because they were easier to replicate, used a widely available material, and could accommodate the increasing use of motor vehicles. Luten claimed that by 1919, he had designed about 17,000 bridges, which could be found in all but three states, according to Purdue University records.

According to the U.S. Census Bureau, about a quarter of Pacific County’s 1,223 square miles are under water. In the early days, there were local



South Nemah River Bridge, located on Lynn Point Road, built in 1959, rated 50. In theory, anything below an 80 qualifies for repairs, and anything below a 40 “bears some careful watching.”

Damian Mulinix — EO Media Group

settlements that were only accessible by boat, or long overland routes. Communities that couldn’t efficiently get goods in or out sometimes got left behind of the growing national economy. For citizens of the time, the bridge-building boom of 1916 and 1917 must have seemed like a sign that 65 years after it was founded, the county was becoming more established.

The Luten bridges have proven to be both lovely and stout — they may be old, but they’ve held up better than some newer bridges made from other materials, according to Pacific County Director of Public Works Mike Collins. He’s the man in charge of inspecting county bridges, and making sure that each is maintained to state and federal standards.

“Those are structurally sound. They look like heck and they’re narrow and such, but they’re just so stout because of the way that they’re built,” Collins said.

Statewide, there are about 3,300 county-owned bridges,

according to Walt Olsen, and engineer with the County Roads Advisory Board, a state agency that oversees management of county-owned infrastructure. Olsen and his colleagues provide support to public works staff, including Collins. They also publish yearly reports, evaluating the quality of county-owned bridges, roads and culverts. Compliance with the CRAB standards ensures that counties will continue to qualify for state fuel tax revenues — a vital source of funding for public works projects.

“That’s a lot of money to a lot of counties, so everybody pretty much toes the mark on all of these standards,” Olsen said in a phone interview.

Guidelines about how to manage bridges are heavily influenced by the United States Department of Transportation, and Federal Highway Administration, which sets safety standards, and also decides which bridge-related projects get federal money.

FWHA has devised a complex safety-rating system,

which local authorities use to rate bridges, during required inspections. Collins said Pacific County DPW workers inspect most bridges once every two years, but they look at the seven remaining timber bridges every year, because they are the least structurally-sound. They also inspect bridges as-needed after major weather events like floods.

Grading old structures

At CRAB, each bridge receives a “sufficiency rating,” between zero and 100, based on data from the county bridge inspections. A higher rating means a bridge complies with modern design standards. In theory, anything below an 80 qualifies for repairs, and anything below a 40 “bears some careful watching,” and qualifies for replacement, Olsen said. In reality, shrinking budgets mean a rating alone will not guarantee a project gets funded, and the process is increasingly competitive.

There are two other designations for aging or poorly-built

bridges. A bridge that is “Functionally Obsolete” is usually too narrow to meet modern standards. It might have only one lane, or it might have just been built before the advent of F-350s and Hummer. But it’s not necessarily dangerous, Olsen said.

A bridge that is “Structurally Deficient” isn’t built to modern weight standards. “The bridge is in fine shape, as long as you don’t overload it. Load is a very key issue here — that’s what causes collapses and failures,” Olsen said. Those bridges often need to be posted with weight-limits, but as long as people obey the load limits, they’re safe, Olsen said.

He cautions that neither the age of the bridge or those labels can determine which bridges are vulnerable on their own. For example, the Skagit River Bridge wasn’t structurally deficient — it just wasn’t designed to withstand the impact of a giant semi crashing into the overhead structures — few bridges are.

In Washington, Olsen said the average sufficiency rating

for county-owned bridges is about 82. “That’s really good. I’d stack our state up against anybody in the 50 states. I think we do a very fine job,” Olsen said.

Recently, FHWA changed its recommendations, saying that more older bridges should have load-limits than previously thought. That led the county to recently add new weight-limit signs to a number of local bridges. But that’s not a sign that the bridges are deteriorating, Collins said. It’s just a precautionary measure.

‘Remarkably good shape’

Olsen says Pacific County’s bridges are in “remarkably good shape.” Currently, only a small portion have a sufficiency rating below 75. That’s partly because during the 1990s, the county rebuilt a large number of aging timber and steel bridges that were mostly built in the 1940s, ’50s and ’60s.

“We really pushed hard to replace a lot of those structures. That put us in pretty good shape,” Collins said.

Collins said inspectors look for wear and tear on the deck — the part you drive on — and sometimes decide to resurface cracked or chipping surface materials. They also look at the arches, spanners foundations. Some bridges need to be seismically fitted, or reinforced to prevent sagging or collapse.

If the foundation of a bridge is crumbling, or has been scoured away by the constant motion of debris in rushing water, “There’s not a lot you can do,” Olsen said.

The feds will generally only pay to replace bridges, not to repair them. CRAB has very limited money for certain types of repairs and maintenance, but most money has to come from local taxes. That means Collins and his crew must carefully prioritize state and locally-funded maintenance projects, to be sure the bridges stay in good working condition.

But Collins says deciding to repair an old bridge can sometimes be “a double-edged sword.” Some aging bridges don’t meet modern needs, but are so sturdy they’ll probably never qualify for replacement. If the county makes repairs that improve the sufficiency rating for a bridge that would otherwise qualify for federal replacement money, it could get stuck with an inadequate bridge that will always need expensive maintenance.

“He’s got to look at that and make his best judgment to his board about which bridge should be put forward for funding,” Olsen said. “It’s a competitive thing.”



Damian Mulinix — EO Media Group

The South Fork Naselle River Bridge, located on South Valley Road, built in 1965, rated a 60.



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The Church Bridge, located on Trask Road, built in 1992, rated an 80.



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The Davis Creek bridge on Knappton Road in Naselle, built in 1963, is rated a 50.

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