

Private Bridges and Emergency Response

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What are private bridges?

Private bridges are where a private road or driveway crosses a river, stream or other waterway. Many were built decades ago without permits or plan review. Some have never been inspected by a qualified engineer, and no documentation exists for how much weight they can handle.

How many of these private bridges exist in Clark County?

Earlier this decade, Clark County identified 679 potential locations where private roads or driveways cross waterways, based on data from the county's geographic information system.

So what does this have to do with emergency response?

Emergency responders may be reluctant to drive heavy vehicles across a private bridge without information about the bridge's capacity or condition and whether it can support their vehicles, which can lead to a slower response for fire and medical emergencies.

If responders do not cross a bridge, they will make every effort to reach the location, including carrying heavy medical equipment or running hoses for extended distances. This, in turn, adds critical delay to providing assistance and increases the potential for more severe property damage and the possibility of more serious injury or even death.

How heavy are emergency vehicles?

A fire engine, fully loaded with equipment, water and personnel, weighs about 38,000 pounds. A water tender, which often is used in more remote areas where there are no fire hydrants, can weigh up to 60,000 pounds.

Has a private bridge in Clark County recently collapsed under the weight of a fire engine or other emergency vehicle?

No, but there have been bridge collapses involving fire engines in other parts of the West Coast and the United States that have damaged or destroyed equipment and injured fighters.

Why don't fire departments and districts purchase lighter vehicles?

Fire engines are the workhorses of fire departments and carry a variety of equipment to handle almost any emergency call. Also, it's not unusual for firefighters to receive another emergency call when they already have been dispatched to a fire, medical emergency or accident. They never know what they will face at the next emergency.

Can a fire department be required to cross a private bridge?

No. In August 2010, a jury ruled in favor of Cowlitz 2 Fire & Rescue after the district notified property owners it would not cross a 133-foot bridge over the Coweeman River. A developer and several property owners filed a lawsuit after an engineering firm hired by the fire district determined the bridge, built by welding two steel rail cars together, was not safe for the district's heaviest equipment.

What standards govern construction of new private bridges?

In May 2012, the Board of County Commissioners approved amendments to county code regarding private bridges.

[Clark County Code, 40.350.040, Private Bridges](#)

Under state law, roads serving homes located more than 150 feet from a fire hydrant must be designed as "fire apparatus access roads" and meet certain requirements for width and load capacity. Private bridges are extensions of these roads and must comply with the same standards.

Prior to adoption of the code amendments, Clark County did not have local standards for private bridges and defaulted to the International Fire Code.

Consequently, Clark County has older private bridges that have fallen into a state of disrepair and aren't sturdy enough for emergency vehicles and newer private bridges that may have been overbuilt prior to adoption of county standards.

Who developed these code amendments for private bridges?

Clark County Public Works formed a work group in early 2011 to examine private bridge issues and to make recommendations. Besides staff members from Public Works, the Fire Marshal's Office and other county departments, the group includes representatives from fire districts and private engineering and law firms.

In addition, county officials met with other fire representatives, building industry officials and real estate agents to gather their thoughts and suggestions.

County commissioners reviewed the proposed code amendments and requested modifications before adopting them in May 2012.

How often should a private bridge be inspected?

Clark County recommends that every bridge be inspected or reinspected by a qualified engineer once every five years.

What is the rationale for this recommendation?

Bridges are like any other structure or building; they need routine monitoring and periodic maintenance to avoid long-term problems and costly repairs. Inspections include examining the condition of piers (supports), beams and the bridge deck.

A qualified bridge engineer also can recommend if a private bridge should be evaluated for scour, a type of erosion caused by water that can undermine bridge piers.

What is the difference between a bridge inspection and a load rating?

A bridge inspection is an assessment of the structure's current condition and a verification or measurement of key dimensions and details.

A bridge load rating is an engineering analysis of a structure's ability to safely carry vehicles of different weights and lengths. This analysis is done in the office and usually takes a few days or a week to complete.

What comes first, the inspection or the load rating?

The bridge inspection needs to be performed before the load rating. Information collected during inspection is used to complete the load rating.

Who can perform bridge inspections and load ratings?

They can be completed by a qualified bridge engineer or engineering firm. Typically, the engineer or firm that does the inspection can complete the load rating as well.

How can private landowners find a qualified bridge engineer?

Clark County Public Works maintains a roster of engineers and firms. A list of engineering firms that offer these services is available on the county's website, www.clark.wa.gov/public-works/private-bridges.

The county cannot recommend a specific engineer or firm and does not certify the qualifications of firms listed on the roster. Private bridge owners may want to consult other resources when selecting a bridge engineer.

How much does a bridge inspection and load rating cost?

Costs will vary substantially, so consider these only rough estimates:

- Initial bridge inspection, \$2,000 to \$10,000.
- Load rating, \$1,000 to \$5,000.
- Scour evaluation, \$500 to \$5,000.
- Reinspection on a five-year cycle, \$500 to \$3,000.

What are the costs for upgrading a private bridge?

Those vary widely, so it's difficult to provide ballpark estimates. A qualified bridge engineer should be able to estimate those costs once an inspection and load rating are completed.

What can private bridge owners do to help make bridge inspections and load ratings less costly?

They can provide design records to bridge inspectors and load raters. These records include original design plans and documents related to later modifications.

What can private landowners do to ensure emergency responders will cross a bridge near their home?

They can have their bridge inspected and load rated by a qualified bridge engineer. It is the bridge owner's responsibility to post a sign indicating the rating, along with the year when re-inspection will be required to maintain the rating. In some areas, fire districts or departments may provide signs. Property owners should check with their fire district or department for more information.

Are environmental permits needed to repair or replace a bridge?

Work near, over or in a stream often requires environmental permits from a variety of public agencies, such as:

- Clark County, <https://www.clark.wa.gov/public-works/permits>
- Washington Department of Fish and Wildlife, wdfw.wa.gov/licensing/environmental.html
- U.S. Army Corps of Engineers, www.nws.usace.army.mil

Is it important to involve permit agencies when considering bridge work, including maintenance?

Bridge work requires consultation on the effects on wetlands, wildlife habitat and other "critical areas." Some of these agencies regulate any bridge work, including routine maintenance, because of its potential effects on wildlife habitat or water quality and flow in creeks, streams and rivers.