

# **Private Bridges and Emergency Response**

## **January 2012**

### **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?**

Clark County has identified 679 potential locations where 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 that have damaged or destroyed equipment and injured firefighters.

### **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.

### **Does this mean emergency responders will never drive across a private bridge?**

No. Emergency responders will cross if load limits are posted indicating the bridge can handle the weight of their vehicle.

### **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?**

Clark County currently does not have local standards for 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.

Without local standards for new private bridges, the county defaults to the International Fire Code when issuing a building permit for a new bridge or conducting an engineering review. Without local standards, private bridges can be overbuilt for the volume and weight of traffic they will carry.

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.

**Is the county developing local standards for building new bridges?**

Yes. Clark County is drafting standards that are appropriate for the traffic a private bridge will receive, as well as one that is safe for emergency responders. By adopting local standards, the county expects construction and repair costs for new bridges will be reduced.

**How often should an existing bridge be inspected?**

Clark County recommends that every bridge be inspected or re-inspected 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 swift flowing 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 “Who to Call” list is available on the county’s website at: [www.clark.wa.gov/privatebridges](http://www.clark.wa.gov/privatebridges).

### **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.
- Re-inspection 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 might be willing to provide signs. Property owners should check with their fire district or department for more information.

### **Will Clark County require property owners to inspect and possibly upgrade an existing private bridge?**

No, but they need to understand that failing to inspect a bridge could result in altered emergency response.

### **Are there any instances where the county could require private bridges to be inspected and upgraded?**

The county is refining its approach, but its current proposal is to require an inspection and potential upgrade only if additional homes are built or if new lots are created. In these cases, developers or builders might choose to have the bridge inspected and possibly upgraded or, alternatively, provide fire-resistant construction, such as building homes with fire sprinklers.

The Clark County Fire Marshal already has authority to require a bridge inspection or fire-resistant construction in these cases. The county is considering standards that would be added to county code, essentially “codifying” what the Fire Marshal already can require.

### **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 Department of Environmental Services  
[www.clark.wa.gov/environment](http://www.clark.wa.gov/environment)
- Washington Department of Fish and Wildlife  
[wdfw.wa.gov/licensing/environmental.html](http://wdfw.wa.gov/licensing/environmental.html)
- U.S. Army Corps of Engineers  
[www.nws.usace.army.mil](http://www.nws.usace.army.mil)

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

Bridge work requires consultation on the width, location and effects on wetlands, wildlife habitat and other “critical areas.” Some of these agencies regulate any work, including routine maintenance, because of the effect it can have on habitat or water quality and flow in creeks, streams and rivers.

**Who is developing this proposal 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 have met with other fire representatives, building industry representatives and real estate agents to gather their thoughts and suggestions.

**Could this proposal change?**

Yes. This is a work in progress. Clark County is interested in hearing comments and suggestions from property owners and other community members before crafting a final proposal.

**How can I comment on this proposal?**

The county encourages public comment and participation. To submit comments or to request more information, contact Carolyn Heniges, Bridge Program Manager, at (360) 397-6118 ext. 4522 or [Carolyn.Heniges@clark.wa.gov](mailto:Carolyn.Heniges@clark.wa.gov).

**Where does the Board of Clark County Commissioners stand on this issue?**

County commissioners held a Sept. 7, 2011, work session on private bridges. Although there was not consensus on every aspect of this issue, commissioners agreed that property owners should be notified about the potential for an altered emergency response and that information should be shared with Clark Regional Emergency Services Agency, which handles 911 dispatching.

**What comes next in the process?**

County staff will continue to talk with property owners and other stakeholders about this issue as it refines its proposal, with a series of open houses scheduled for late January and early February to gather public comments and suggestions.

Tentative plans call for the Board of County Commissioners to hold another work session to discuss this issue at 9 a.m. March 14 in the Public Service Center, 1300 Franklin St. The Clark County Planning Commission is scheduled to hold a public hearing at 6:30 p.m. March 15, also in the Public Service Center, after which the proposal could be presented to the Board of County Commissioners for review and possible adoption.