

City of Prince Albert

Diefenbaker Bridge Load Limit Update

Monday, March 12, 2012

The weight limit on the Diefenbaker Bridge in Prince Albert has been increased from 47,000kg to 63,000 kg as of midnight on Thursday, March 8, 2012.

Traffic has been allowed to run at a weight of 47,000 kg since Feb. 14, 2012. Since Feb. 14, engineers have completed further inspections to ensure the bridge can now carry the primary weight limit of 63,500 kg. Primary weight is the highest legal weight that shippers can carry on Saskatchewan highways without a permit.

This weight increase will allow trucks carrying up to 63,500 kg to use the bridge while further repairs take place. These repairs will prevent future cracks from occurring, and are expected to be completed in August. Engineers will continue to inspect the bridge weekly until August.

The bridge was inspected and evaluated by engineering consultant Stantec and repair work began in November 2011. Repairs involved jacking up the damaged section and bolting in a new 1.5 metre section of the bridge. Live load testing occurred on Dec. 19 and 20 and access to all four lanes was restored on Dec. 21, 2011, at a restricted weight limit of 15,000 kg.

The Province of Saskatchewan is funding 100 per cent of the repair of Diefenbaker Bridge over the North Saskatchewan River in Prince Albert, which connects to Highways 2 and 3 on the provincial transportation network. Previously the provincial and municipal governments had a 50-50 cost-share agreement on the bridge.

City of Prince Albert

Diefenbaker Bridge Load Limit Update

Tuesday, February 14, 2012

The weight limit on the Diefenbaker Bridge has been increased to 47,000 kilograms (kg) following the repair of the cracked girder and inspection of the complete bridge.

Inspections of the bridge have shown that the weight limit can now be safely increased to 47,000 kg. This is the weight limit typically applied to a fully-loaded semi-trailer unit with a single tridem axle trailer, or a partially loaded Super-B type truck. A total of 85 per cent of the trucks travelling on the Diefenbaker Bridge are under 47,000 kg.

Weekly inspections of the bridge will take place while traffic is running over the bridge at a weight limit of 47,000 kg. If the bridge performs as anticipated, the primary weight limit of 63,500 kg could be restored to the bridge by early March. This will allow primary weight trucks on the bridge while further repairs take place to prevent future cracks from appearing. The final repairs are expected to be completed in August, and weekly inspections will continue until that time.

The Province of Saskatchewan is funding 100 per cent of the repair of the Diefenbaker Bridge over the North Saskatchewan River in Prince Albert, which connects to Highways 2 and 3 on the provincial transportation network. Previously the provincial and municipal governments had a 50-50 cost-share agreement on the bridge.

City of Prince Albert
Diefenbaker Bridge Load Limit Update

Friday, January 13, 2012

The City is moving forward with a system for weekly inspections of the Diefenbaker Bridge. Once established, load limit increases will be phased in. It is expected that load limits could be increased to 28,000kgs (from the current 15,000kgs) by early February.

A safety system that will allow the bridge to be visually inspected on a weekly basis is being installed and it is expected that once in place some changes to the weight restrictions will be possible.

The City will be working with its engineering consultants and the Province to establish a process that will allow the City to raise the weight restrictions once this safety system and inspection protocol has been established.

City of Prince Albert

Diefenbaker Bridge Repair Update

Wednesday, December 21, 2011

Four lanes of traffic on the Diefenbaker Bridge are now open. The live load testing that occurred on Monday, December 19 and Tuesday December 20 went well and north and southbound traffic has been fully restored.

Although four lanes of traffic are open, the weight restriction of 15,000 kgs is still in place. The City, along with the Ministry of Highways and Infrastructure and the engineering consultants continue to work on a plan to have the weight restriction raised.

In addition to this, there are three phases of work that remain for the Diefenbaker Bridge. They are:

Phase 2: Constraint Induced Fracture Retrofit

Phase two includes repair work that will prevent this type of crack from occurring again. It is expected this will occur in the spring of 2012.

Phase 3: Ongoing Monitoring

This will include the development of a long term strategy to monitor the bridge to ensure that it maintains its expected service life.

Phase 4: Additional Remedial Action

This will include the longer-term repairs to the bridge including repairs identified in earlier bridge inspections. This includes the railing, bearings, rocker plates, utility supports and repairs to the transverse floor beams.

City of Prince Albert
Diefenbaker Bridge Repair Update

Monday, December 19, 2011

Work continues on the Diefenbaker Bridge with crews slightly ahead of schedule. Crews started jacking the bridge on Thursday, December 15, 2011 and repair of the bridge girder started on Friday, December 16, 2011.

Live load testing began on Monday, December 19, 2011. The bridge was subject to closures for 10 minute intervals on Monday to accommodate the testing on the northbound lanes. Testing on the southbound lanes will start on Tuesday, December 20, 2011 with the same ten minute closures expected.

City of Prince Albert **Diefenbaker Bridge Repair Update**

Friday, December 02, 2011

The following timeline for phase one of the repair work on the Diefenbaker Bridge has been established:

Tower erection complete:	Present - December 10
Ready to start jacking the bridge	December 15-16
Ready to begin cutting steel	December 16
Repair complete	December 22
Live Load Testing	December 22
Open to Four Lane Traffic	December 25

Four lanes are expected to be open by Christmas.

It is hoped that some adjustment to increase the weight limit on the bridge will be possible; however no decision will be possible until later this month.

City of Prince Albert

Diefenbaker Bridge Repair Update

Thursday, October 27, 2011

Last week the Bathymetry survey was completed. A Bathymetry Survey is a survey of the bottom of the river bed to determine the depth of water so that soil quantities can be determined for the coffer dam construction. The coffer dam will be the means to building a platform for the bridge jacking.

The design of the CIF repairs is almost complete along with the repair method for the girder. The preferred option for the girder appears to be to cut out the broken section of the girder and to then rebuild this section.

Next week Graham has been asked to take measures to stop the crack from spreading. They will be drilling holes at the top of each crack and also taking samples so that yield and tensile strengths of the existing girder can be determined.

The decision has been made to build the coffer dam from the north east side of the bridge. Several factors are being considered at this time:

1. Availability of material
2. The location of existing structures such as gas line, telephone and hydro lines, embankment heights, the Rotary trail and structures on the south side of the bridge etc.
3. Disruption to current traffic.

A contract for \$1.0 million has been approved by the province. This amount will allow the City to proceed with repairs while the election is on when ministerial approval is unavailable. Further approvals for necessary funds will be sought as work proceeds.

City of Prince Albert

Diefenbaker Bridge Repair Update

Friday, October 14, 2011

The City of Prince Albert has received a preliminary update regarding the repair schedule for the Diefenbaker Bridge.

The update being provided at this time is the most recent information available to the City Manager's office from the consultants working on the repair of the Bridge. Updates will continue to be provided to the media and the public when new information becomes available, but it should be noted that due to the complex nature of the repair process, it is possible that processes and timelines will change.

At this time, it has been reported that there are four phases identified for the Bridge repair (some occurring simultaneously).

Phase 1: Repair of the girder crack

It has been determined that the only safe and sure way to repair the girder is to jack the bridge from the water. This will take strain off the girder and allow a contractor to repair the break. At this time, the method to repair the girder is still being finalized and tenders for this work will be let in the next few weeks.

Two options are being explored to jack up the bridge, but the current favored option is to build a rock platform in the river and jack from there.

Federal ministry approval is required because it involves the river. It is expected that the work will be able to start after November 15, 2011.

Once repaired, it is expected that four lanes of regular vehicle traffic will open. It is not possible to determine at this point if the weight restriction will be able to increase.

It is expected that the girder repair will be complete by Christmas. Once repaired, a determination on the weight restriction will be made.

Phase 2: Constraint Induced Fracture Retrofit

Phase two includes repair work that will prevent this type of crack from occurring again. It is expected this will occur in the spring of 2012.

Phase 3: Ongoing Monitoring

This will include the development of a long term strategy to monitor the bridge to ensure that it maintains its expected service life.

Phase 4: Additional Remedial Action

This will include the longer-term repairs to the bridge including repairs identified in earlier bridge inspections. This includes the railing, bearings, rocker plates, utility supports and repairs to the transverse floor beams.

Diefenbaker Bridge – Inspection Update

September 27, 2011

The City of Prince Albert has received preliminary reports from the City's bridge engineers following a visual and Magnetic Particle/Ultrasonic testing inspection of the Diefenbaker Bridge.

At this time, the City of Prince Albert can confirm that the weight restriction on the Diefenbaker Bridge **will remain at 15,000kgs (33,000lbs)**. It is considered too early in the analysis to increase the weight restrictions.

Also at this time, the City is able to report that the nature of the crack is considered to be a brittle fracture or constraint induced fracture (CIF). Several contributing factors lead to this type of crack including the steel type, connection geometry of the bridge and fatigue.

The research surrounding CIF's is relatively new, but the research does suggest that "the failure occurs without warning and the details are essentially non-inspectable."

There are documented occurrences of CIF in North America including recently in Alberta. Stantec, the engineering firm working on the bridge, will be working in cooperation with its Edmonton office and experts in the field of CIF, to expedite an effective repair of the Bridge.

Work is proceeding to determine the repair of the bridge as a whole and measures to mitigate this from occurring at other locations on the bridge. A repair schedule will be released when available.

In the meantime, Prince Albert City Council has expedited the repair process by authorizing City Administration to approve the necessary investigative or consulting work as needed. City Council will be provided with information reports as the work progresses. The provincial government will also be informed throughout the process.

Diefenbaker Bridge Repair Funding

The Diefenbaker Bridge is owned by the City of Prince Albert, but through a new funding agreement, announced on Thursday, September 15, 2011, with the Ministry of Highways and Infrastructure, the current and future repairs of the bridge will be 100% funded by the Province.

The agreement is part of the Urban Highway Connector Program. Previously the maintenance of the Diefenbaker Bridge was cost shared 50/50 with the Province. Discussions regarding the designation of the Bridge as a level one, national highway system began in March of this year with confirmation from the Province in July 2011 and final approval from City Council on September 12, 2011.

The Diefenbaker Bridge – Southbound Lane Closures Wednesday, August 31, 2011

On Monday, August 29 the City was made aware of a potential crack in one of four support girders of the Diefenbaker Bridge.

On Tuesday, August 30, at 8:00am once it was clear there was a crack, the City initiated the closure of the southbound lanes of the Diefenbaker Bridge.

Two-lane traffic was redirected to the northbound lanes.

At this time, safety is the number one priority of the City. As a precautionary measure, a weight restriction of 15,000 kg (33,000lbs) has been implemented to ensure the integrity of the northbound lanes.

Drivers should contact the Ministry of Highway - Transport Compliance Branch at 1-866-933-5290 for alternate route information.

The Northbound and Southbound sides of the Diefenbaker Bridge are separate structures. This means that what happens on the south side does not affect the north side. This is why northbound traffic is still permitted.

Background

The Diefenbaker Bridge is inspected every two years in accordance with accepted engineering standards.

The last inspection was on August 18, 2010.

The Diefenbaker Bridge Inspection report concluded that “based on these results, the bridge is safe for current provincial legal load limits.”

Next Steps

An engineering inspection is currently underway on the bridge and a determination regarding the continuation of the weight restriction on the northbound lanes is expected within the next several days.

The extent of the work required will also be determined and a timeline for repair.

Further information will be released when available.