

# **Statement of Heritage Significance**

## **Canadian Northern Railway Bridge Prince Albert**



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*Cover Photo:* Canadian Northern Railway Bridge, Prince Albert, looking downstream from the left bank (R. Herrington; September 18, 2007).

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#### **STATEMENT OF SIGNIFICANCE**

The Canadian Northern Railway Bridge is located in Prince Albert and crosses the North Saskatchewan River immediately upstream from the Diefenbaker Bridge. The railway bridge, which was completed in April, 1909, consists of seven steel truss spans with a central inoperable swing span.

#### **HERITAGE VALUE**

The heritage value of the bridge lies in its status as a distinctive feature and an important community landmark across the North Saskatchewan River. From 1909 until 1960, the bridge served as the only fixed link across the river at Prince Albert, and today is one of only two bridges in the community. As such, the bridge is a dominant element in the city's landscape and has had a significant influence on the roadway and settlement patterns in the community. Except for the removal of the roadway and pedestrian attachments, the structure remains largely unchanged since its completion in 1909.

The heritage value of the bridge also resides in its association with the Canadian Northern Railway. The combined railway and traffic bridge helped to solidify the economic importance of Prince Albert by opening up the area north and west of the North Saskatchewan River. The CNoR provided an alternate rail route to the Battlefords and was directly responsible for the establishment of more than 550 prairie cities, towns, and villages which had been nonexistent before the coming of the railway. Many of the new settlers occupied homesteads, towns, and villages opened by the Canadian Northern. The railway had an impact in northern Saskatchewan similar to that of the CPR in the south.

The heritage value of the structure also resides in its engineering technology. The unusual central swing span is unique in Saskatchewan and permitted river navigation from Prince Albert as far as Edmonton. While the swing span remained in operation for only about eight years, this artifact remains as a visible symbol of the steamboat era.

#### **CHARACTER-DEFINING ELEMENTS**

The heritage value of the Canadian Northern Railway Bridge at Prince Albert resides in the following character-defining elements:

- those elements which speak to its status as a landmark in the community, including its form and massing and its location on its original site;
- those elements that reflect the property's engineering technology, such as the steel Pratt trusses and unique central swing span truss.

## ADDITIONAL INFORMATION

### A. Historical Significance

Railways in Western Canada “were instruments of political and economic power, and of considerable importance to the viability of the province.”<sup>1</sup> In the early settlement period, the prairie railways provided access to markets of local products, such as wheat and lumber, as well as bringing in goods and settlers. The dictum that a farmer could only haul his grain a distance of ten miles influenced the locations of branch lines and, in turn, the location of towns and other support infrastructure, such as the road network.

The railway network in Western Canada developed in three phases.<sup>2</sup> The pioneer era, from 1882 to 1893, saw the completion of the Canadian Pacific Railway main line through Saskatchewan to British Columbia as well as the construction of several small branches such as the Qu’Appelle, Long Lake and Saskatchewan Railway. The pre-First World War boom from 1898 to 1913 resulted in unprecedented railway expansion as the Canadian Northern Railway (CNoR) and Grand Trunk Pacific (GTP) Railway competed aggressively with the CPR. Unfortunately for Prince Albert, this period of intense railway expansion ended with Prince Albert essentially being the terminus of three branch lines.<sup>3</sup> Finally, the 1920s boom period was characterized by intense rivalry between the CPR and Canadian National Railways<sup>4</sup> (CNR), particularly in the development of branch lines in Northern Saskatchewan.

Beginning in 1874, as many as three steamboats provided transportation between Prince Albert, North Battleford and Edmonton.<sup>5</sup> This monopoly ended with the arrival of the Qu’Appelle, Long Lake and Saskatchewan Railway (QLL&S) in 1890. The QLL&S Railway originated in Regina and extended to Prince Albert via Saskatoon. The line initially was leased to the CPR and then was purchased by the Canadian Northern Railway in July, 1906.<sup>6</sup>

The Canadian Northern Railway was formed on January 13, 1899 by businessmen William Mackenzie and Donald Mann through the amalgamation of the Winnipeg Great Northern Railway and the Lake Manitoba Railway and Canal Company. They obtained a charter to extend their line from Swan River, Manitoba to Prince Albert with the condition that this be completed within two years. By March 1901 the line had reached Red Deer but was bogged down by muskeg and heavy bush.<sup>7</sup> Prince Albert realized that the town would remain a backwater unless a second railway company could be persuaded to extend their line to the north. The boom years of 1902 and 1903 saw a rapid expansion in Prince Albert’s population. The price of grain was high and as was the demand for lumber. However, without easy access from the east by railway, settlers began to ignore the north and homestead on land between Davidson and Battleford. Although the CNoR line to Prince Albert was surveyed by June 1902, the optimism that the railway would reach Prince Albert in 1902 and Edmonton in 1903 quickly vanished,<sup>8</sup> particularly when the CNoR decided to focus on their main line through Humboldt and Battleford.

By January 1903, the CNoR line was finally laid west of Hudson Bay, and by June of that year plans were announced for a combined railway and traffic bridge over the North Saskatchewan River.<sup>9</sup> Optimism declined again in February 1904 when it was realized that the track was only as far as Melfort. It would be two more years before the CNoR line would actually reach Prince Albert.

Until the CNoR bridge was built at Prince Albert, access across the river during the summer periods was by cable ferry, which was located at several sites between First Avenue West and First Avenue East. It was recognized by 1907 that the ferry was entirely inadequate to meet the needs of the City of Prince Albert<sup>10</sup> and area and a traffic bridge was essential to serve the expanding population on both sides of the river.

To complete their northern route to Edmonton, the CNoR needed to bridge the North Saskatchewan River at Prince Albert. Once across the river, the line would split with one going straight north to Paddockwood and the other west to Shellbrook.<sup>11</sup> Although the CNoR started the line to North Battleford in 1909, the company paused at Shellbrook to build a line to Big River. Consequently, the line to North Battleford was not completed until 1914.<sup>12</sup>

In October 1906, the ratepayers of Prince Albert approved a by-law to grant \$25 000 towards the construction of a roundhouse and station which were already under construction by the CNoR. In exchange it was expected that the railway company would hasten the construction of a bridge over the river.<sup>13</sup> Various buildings had been constructed and gravel had been stockpiled over the winter so all the signs appeared positive. However, by the spring of 1907 local residents were becoming frustrated with the lack of progress.

In April, 1907 the provincial government announced that they would build a traffic bridge if the CNoR did not build the combination bridge.<sup>14</sup> More than anything, the province wanted the rail line extended to North Battleford and supported a combination bridge if there were some assurances from the CNoR that they would push this line through quickly. By that summer the Department of Public Works had yet to get a response from the railway company. In the meantime, the provincial government had committed \$60 000 towards a separate traffic bridge.

Finally, the government received a telegram from the CNoR in August 1907 agreeing to the construction of a joint railway and traffic steel bridge on concrete piers with a roadway on each side of the bridge. Construction would start immediately and be completed by November 1, 1908.<sup>15</sup> As it turned out, the steel truss bridge with two 12-foot roadway attachments was not completed until April 1909.<sup>16</sup>

The CNoR had focused on occupying the northern prairies and although this delayed the completion of their transcontinental line, it ensured profitable operations from the beginning without the need for high freight rates.<sup>17</sup> The CNoR recognized that “most of the traffic that was needed to make their railway profitable would either originate on, or be destined for, the prairies.”<sup>18</sup> Their policy of developing a strong network of branch

and feeder lines before building the long transcontinental connections was instrumental in opening up the country north and west of Prince Albert.

The CNoR Bridge became the “connecting link between the farmers across the river and the markets of the world.” It also provided an alternate rail route to the Battlefords and revolutionized the local lumber business by bringing logs in by rail.<sup>19</sup> The bridge also eventually encouraged tourist traffic to Prince Albert National Park. In short, the bridge helped to solidify the economic importance of Prince Albert. Unfortunately, the CNoR structure turned out to be a second-class traffic bridge. The province could have constructed a separate traffic bridge for little more than their contribution to the railway bridge with roadway attachments. The province did not achieve their immediate goal of a rail line to North Battleford in 1909. The CNoR bridge remained the only direct link to the north for fifty-one years.

It has been estimated that the CNoR “was directly responsible for the establishment of more than 550 prairie cities, towns, and villages which had been nonexistent before the coming of the railway. Obviously many of the new settlers occupied homesteads, towns, and villages opened by the Canadian Northern.”<sup>20</sup> The impact of the CNoR, while not as significant as the CPR, was obviously very great in the northern prairies.

## **B. Engineering Significance**

The provincial Department of Public Works had begun to consider the possibility of a combination railway and traffic bridge at Prince Albert by 1906. They initially had considered attaching one ten-foot roadway to the CNoR bridge and had received a quote from the Canadian Bridge Company of Walkerville, Ontario that the additional cost to strengthen the proposed steel truss for roadway brackets would be \$6000.<sup>21</sup>

In March 1907, Archibald McPherson, the Assistant Chief Engineer for the provincial Department of Public Works, traveled from Regina to Prince Albert to assess the possible construction of a separate traffic bridge across the river.<sup>22</sup> He investigated three sites and concluded that the cheapest place would be opposite First Avenue West, near the proposed CNoR bridge. He notes that the municipal council was prepared to provide funding to the railway company “as soon as the railway bridge is suitable for traffic purposes.” Although he makes it clear that the combination CNoR traffic bridge has not been approved, McPherson seems to favour a separate traffic bridge.

The CNoR Bridge at Prince Albert was started in late September 1907 and opened in April 1909. It consists of seven spans. From south to north these include: three 146-foot steel Pratt trusses, a 256-foot steel Pratt truss swing span, two 156-foot steel Pratt trusses, and a timber pile trestle approach. The superstructure was supplied by the Hamilton Bridge Company.

By the end of November 1907, work was progressing on the concrete abutments as well as on one of the river piers; eight piers had been started by the end of that year. All piers were completed before the ice went out in the spring. The piles to support the false work

for the superstructure were driven during the summer and the steelwork was erected at the end of the 1908 navigation season.

Since steamboats, and particularly the rafting of log booms from the Shell River upstream of Prince Albert, were still using the river when the bridge was being built, it was necessary for the railway bridge to be constructed with a moveable span. The normal engineering solutions at the time included either a swing span or vertical lift span. Swing spans, which were often used on wider rivers, were relatively common in Canada by the 1880s and into the twentieth century. The vertical lift span was less common and was more suited to narrow channels, such as canals. Although one was built in Nova Scotia in 1899, very few had been built in Canada prior to the First World War.<sup>23</sup> The CNoR decided on a swing span, whereas the provincial Department of Public Works offered the opinion that a vertical lift span would reduce the size of the piers and would result in less obstruction to river navigation and log runs.

The centre swing span continued to be operated for navigation until about 1918, but was not needed after this date particularly since the downstream Prince Albert saw mill near 17<sup>th</sup> Avenue East closed in 1918. A dam that was partially constructed a few miles downstream from the bridge in 1937 effectively rendered the river unnavigable downstream for larger vessels. In late 1939 the Department of Transport granted CNR's request to change the moveable span to a fixed span.

The Department made it clear to the CNoR in the summer of 1907 that the bridge must have a ten foot roadway on each side.<sup>24</sup> For some reason, this request for a roadway attachment apparently had changed later that year to one 12-foot bracket.<sup>25</sup> The province may have recognized that a wider roadway was more desirable and initially may have considered the cost of two 12-foot attachments too high. In any event, further discussions resulted in the actual installation of two 12-foot roadway attachments.<sup>26</sup> It would appear that the floor of these roadways and the permanent earth work approaches on the north end of the bridge were not completed until the end of 1909.<sup>27</sup>

The province may have initially regretted their decision to attach roadways to the CNoR Bridge. The trains crossing the bridge caused so much vibration that the roadway surface did not stand up. The highways department was forced to experiment with various types of roadway flooring, such as 2x2 timbers laid longitudinally on edge, 2x6 timbers with the 6-inch side laid flat; or the standard 3x8 or 3x10 timbers laid transversely to traffic direction. The results of these tests seem to favour the first option.<sup>28</sup>

An agreement was made in 1931 between the Canadian National Railway and the Winnipeg Bridge Company to supply, deliver and erect new sidewalk bracket extensions on each side of the existing highway brackets.<sup>29</sup>

Traffic continued to use the railway bridge until the Diefenbaker Bridge was constructed immediately downstream from the old CNoR bridge. While Prince Albert's City Council passed a resolution in April 1947 to construct a new traffic bridge over the North Saskatchewan River, construction did not start until much later. The Diefenbaker Bridge

for highway traffic was opened officially on October 12, 1960, but was not ready for use until the following year.<sup>30</sup> The roadway and sidewalk attachments on the CNoR Bridge likely were removed shortly after due to safety concerns.

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<sup>1</sup> Kozma, L.S., “A Survey of Railway Bridges in Saskatchewan: 1882 to 1996”, unpublished report for the Saskatchewan Heritage Foundation, Grant No. 94-20R, 1996, p.1

<sup>2</sup> Several stagnant periods existed between these active eras. For example, the CPR like other railways experienced severe economic hardships during the 1890s.

<sup>3</sup> Abrams, Gary W.D., Prince Albert: The First Century, 1866-1966, Modern Press, 1966, p.149.

<sup>4</sup> The CNR was formed in 1917 when the federal government took over the insolvent GTPR and CNoR and merged them with other publicly-owned lines.

<sup>5</sup> The last steamboat left Prince Albert in 1919. See Silversides, Brock V., Gateway to the North: A Pictorial History of Prince Albert, 1989, Western Producer Prairie Books, Saskatoon, p.50.

<sup>6</sup> Eagle, John A., The Canadian Pacific Railway and the Development of Western Canada, McGill-Queen’s University Press, 1989, pp.86-87.

<sup>7</sup> Abrams, Gary W.D., Prince Albert: The First Century, 1866-1966, Modern Press, 1966, p.113.

<sup>8</sup> Abrams, Gary W.D., Prince Albert: The First Century, 1866-1966, Modern Press, 1966, p.128.

<sup>9</sup> Abrams, Gary W.D., Prince Albert: The First Century, 1866-1966, Modern Press, 1966, p.129.

<sup>10</sup> The settlement of Prince Albert was started in 1866 by Rev. James Nesbit. It became a city on October 8, 1904.

<sup>11</sup> The line to Shellbrook was completed in 1910.

<sup>12</sup> Abrams, Gary W.D., Prince Albert: The First Century, 1866-1966, Modern Press, 1966, p.148.

<sup>13</sup> *Prince Albert Times*, October 11, 1906, p.4.

<sup>14</sup> *Prince Albert Times*, April 25, 1907, p.4.

<sup>15</sup> *Prince Albert Times*, August 8, 1907, p.1.

<sup>16</sup> *Saskatoon Phoenix*, April 19, 1909.

<sup>17</sup> Regehr, T.D., The Canadian Northern Railway: Pioneer Road of the Northern Prairies, 1895-1918, The Macmillan Company of Canada, 1976, p.159.

<sup>18</sup> Regehr, T.D., The Canadian Northern Railway: Pioneer Road of the Northern Prairies, 1895-1918, The Macmillan Company of Canada, 1976, p.163.

<sup>19</sup> *Prince Albert Times*, August 8, 1907, p.4.

<sup>20</sup> Regehr, T.D., The Canadian Northern Railway: Pioneer Road of the Northern Prairies, 1895-1918, The Macmillan Company of Canada, 1976, p.458.

<sup>21</sup> See memo on file 226-49-05A at Saskatchewan Highways and Transportation, Bridge Services, Regina, dated February 6, 1907.

<sup>22</sup> See memo on file 226-49-05A at Saskatchewan Highways and Transportation, Bridge Services, Regina, dated March 20, 1907.

<sup>23</sup> Young, C.R., “Bridge Building”, *The Engineering Journal*, Vol. 20, June 1937, p.490.

<sup>24</sup> Letter from Premier Walter Scott to William Mackenzie, President of the CNoR, dated July 29, 1907, on file 226-49-05A at Saskatchewan Highways and Transportation, Bridge Services, Regina.

<sup>25</sup> Annual Report of the Department of Public Works for 1907-08, p.86.

<sup>26</sup> Annual Report of the Department of Public Works for 1908-09, p.73.

<sup>27</sup> See memo on file 226-49-05A at Saskatchewan Highways and Transportation, Bridge Services, Regina, dated February 22, 1910.

<sup>28</sup> See memo on file 226-49-05A at Saskatchewan Highways and Transportation, Bridge Services, Regina, dated January 10, 1917.

<sup>29</sup> See memo on file 226-49-05A at Saskatchewan Highways and Transportation, Bridge Services, Regina, dated August 17, 1931.

<sup>30</sup> Personal communication with James Benson, Prince Albert Historical Society, December 5, 2007.