

CPR: BUILT TO LAST



Provincial Trunk Highway #9, Selkirk, Manitoba, Canada

>>> FULL- AND PARTIAL-DEPTH REPAIRS, DIAMOND GRINDING

LOCATED IN THE CANADIAN province of Manitoba, Provincial Trunk Highway (PTH) 9 is a 53-mile-long (85-kilometer) provincial highway that runs from Winnipeg to Gimli. It is known as Main Street between Winnipeg and Selkirk. The 32-year-old concrete pavement required rehabilitation on a two-mile (3.2-kilometer) section, due to transverse joint deterioration and uneven wear of the existing seal coat causing a rough ride. Having considered complete reconstruction and a bituminous overlay as options, the Manitoba Infrastructure and Transportation (MIT) chose to perform Concrete Pavement Preservation (CPP) as a more cost-effective treatment method.

This project involved CPP in the form of dia-

mond grinding, full- and partial-depth joint repairs and resurfacing of the bituminous shoulders on the four-lane wide section of road. Prior to performing the rehabilitation, an unsuccessful attempt was made to remove the existing seal coat. It was determined that the seal coat could only be removed during the final diamond grinding operation, which was included as one of the rehabilitation treatments to improve the ride of the rehabilitated concrete. Prior to grinding the average International Roughness Index (IRI) of the northbound travel lanes was 250 inches/mile (3.95 m/km) while the southbound lanes measured at 274 inches/mile (4.32 m/km), which was caused primarily by the deteriorated transverse joints and uneven wear of the seal coat. At the completion of the concrete reha-

TEAM MEMBERS

- Manitoba Infrastructure and Transportation (Owner)
- Borland Construction (Prime contractor)
- Diamond Surface (Diamond grinding)

bilitation, the IRI was recorded at 135 inches/mile (2.13 m/km) northbound and 116 inches/mile (1.83 m/km) southbound, resulting in a smoothness improvement of 46 percent and 58 percent respectively.

"We anticipate that this treatment will last 15-20 years, which would be similar to the bituminous overlay but less costly," said Josh Plett, PE, Senior Project Engineer, MIT.

The total project value was \$2,600,000, which was a cost savings compared to a bituminous overlay (\$4,500,000) or total reconstruction (\$12,800,000). The project was completed in October 2011.