Transportation

Highways and Bridges

Client

Stantec (prime consultant) and Alberta Transportation (owner)

Location

Fort McMurray, Alberta, Canada

Athabasca River Bridge at Fort McMurray

Project Highlights

- Largest bridge construction project in Alberta
- Innovative girder design to accomodate launching into position for reduced environmental impacts and construction schedule optimization
- Designed for northern climate extremes, including significant river ice forces and large thermal range from summer to winter
- Designed to carry oversized, 28-axle trucks, over 12 times the weight of legal highway truck vehicles

Ongoing development of major oil sands projects in northern Alberta, with the accompanying increases in traffic volumes, including large, heavy load traffic, resulted in the need for a new bridge on Highway 63 over the Athabasca River at Fort McMurray.

The new 1,500-foot-long, seven-span, steel “I” girder bridge, which incorporates the largest bridge deck in the province, will carry five lanes of traffic, with a 13.5-foot-wide sidewalk and bikeway, and under-deck utilities. In addition to normal highway bridge design requirements, the bridge is designed to carry special 28-axle, overload trucks used for hauling extremely heavy loads to the oil sands plants. The bridge girders are also designed for future strengthening to accommodate even larger overloads should the need arise. The bridge deck can accommodate a fixed automated spray technology de-icing system to address unsafe winter driving conditions.

A significant innovative aspect of the bridge design was that 6 of 7 spans of the girders could be launched into position on top of the piers in the Athabasca River. This allowed the girder installation to proceed either conventionally, with cranes situated in the river channel, or by launching using horizontal jacking technology from a shore staging area. Launching was adopted by the contractor and resulted in a reduced amount of in-stream environmental impact and optimized the construction duration.

CH2M HILL completed the detailed design in 2007 and the project was tendered in April 2008. Construction is underway, and the expected project completion is June of 2011.