LINDSAY™ | CONSTRUCTION CASE STUDY

Knik River Bridges

Glenn Highway Alaska

ROAD ZIPPER™

KNIK RIVER BRIDGES

CONSTRUCTION
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Project Overview

The scenic northbound and southbound Knik River Bridges on Glenn Highway in Alaska serve as a vital connector for commuters, freight, and emergency services.

The 60-year-old northbound bridge and the 30-year-old southbound bridge underwent 'first-of-their-kind' major rehabilitation work beginning in April 2024. About 31,000 drivers cross these bridges daily, and the goal of the construction project was to extend the service lives of the bridges, reduce maintenance costs, and enhance safety.

The Knik River Bridge rehabilitation and bridge deck preservation project included resurfacing of both bridge spans (northbound and southbound), installing new approach slabs at each end, and replacing expansion joints. As a result, the project work required complete closure of each bridge for at least 30 days. With one span fully closed, Alaska DOT faced the risk of severe congestion, delays, and increased crash potential between Anchorage and the Matanuska-Susitna Valley.

Alaska DOT considered several options to address the traffic mobility and safety challenges, including placing temporary concrete barriers down the middle lane of the (open to traffic) bridge to separate bi-directional traffic. However, this alternative limits traffic to one lane in each direction, causing significant congestion and delays for commuters. Another option was to install a temporary bridge, but the costs involved were prohibitive.

The Flexible, Efficient Solution

Alaska DOT's partner on the project, Hamilton Construction, chose to implement a reversible middle lane or moveable median strategy using the Road Zipper Moveable Barrier System™. This alternative maximized traffic flow, especially during peak travel periods, and maintained positive protection between bi-directional traffic.

With the Road Zipper System™, crews were able to transfer barriers and switch lane direction twice a day along the ~0.3 miles (1,532 ft) long bridge in as little as 15 minutes, creating two lanes of traffic in the peak travel direction while allowing work to be done on the other bridge simultaneously.

Road Zipper™ Implementation

When one bridge was closed for construction, the Road Zipper System enabled the other bridge to remain open at a reduced speed to three lanes of traffic – two lanes in one direction and one lane in the other.

"The Road Zipper Technology – to be able to move the barriers twice a day to accommodate the peak flow of traffic – was ideal."

Jason Lamoreaux, ***Construction Project Manager***
Alaska Department of Transportation

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Each day, the moveable barrier was transferred by the crew to accommodate two lanes inbound to Anchorage in the morning, then shifted to two lanes outbound to manage the afternoon rush to the Mat-Su Valley. This helped significantly improve roadway efficiency and safety in both directions. To improve traffic flow on the weekends, two lanes were available to traffic headed to the Mat-Su Valley on Saturday, while on Sunday, two lanes were available for Anchorage-bound traffic.

Project Benefits

The Road Zipper System was successfully deployed to create a temporary reversible lane that helped manage peak-direction traffic flow, optimize traffic throughput, and improve traffic safety during the long-term closure and rehabilitation of the Knik River Bridges.

EASILY MANAGED TRAFFIC FLOW

Dynamically reconfigured travel lanes based on peak travel periods to maintain critical access for thousands of travelers daily.

IMPROVED SAFETY

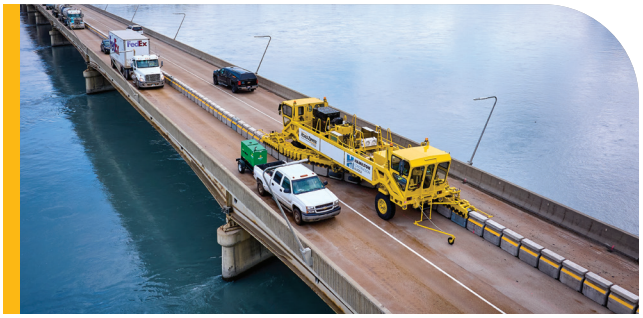
Created crashworthy separation between opposing traffic during contraflow operations to enhance traffic safety and helped establish an efficient, distraction-free, and separated work zone.

EFFECTIVE IN ALL WEATHER CONDITIONS

Minimized driver confusion and delays during an extended construction schedule in the harsh Alaska weather.

UTILIZED CURRENT INFRASTRUCTURE

Provided a cost-effective traffic control alternative that avoided major infrastructure expansion and eliminated the need for temporary detours or widening projects.



"They (Lindsay) brought the Road Zipper System to us. It was a nice, easy handoff. We're deploying it three separate times. Each time, the team has helped us improve and make tweaks. Everyone's been really happy with this construction project."

Jacob Shelton, *Project Manager*
Hamilton Construction

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