

# CPR: BUILT TO LAST



## FDR Ramp at RFK Bridge, Manhattan, NY

### >>> LONGITUDINAL GROOVING OF ASPHALT PAVEMENT

**NEW YORK CITY'S** Robert F. Kennedy Bridge (formerly the Triborough Bridge) is the Manhattan Transit Authority's (MTA) flagship structure. Opened in 1936, it consists of three bridges, a viaduct, and 14 miles of approach roads connecting Manhattan, Queens, and the Bronx. Franklin D. Roosevelt East River Drive (known more commonly as FDR Drive) intersects at 125th Street and the bridge heading northbound. The FDR ramp, approximately 1,800 feet long and 70 feet wide, was in need of surface repairs. The existing asphalt pavement was subject to extremely high levels of truck traffic and was distorted and shoved to the point where it was considered a safety hazard. To this end, the MTA looked to diamond saw cut surface textures for added safety, which can provide unparalleled wet weather traction and stability.

The existing high-performance overlay, which was applied a few years prior, had begun to show signs of wear. The solution came in the

form of longitudinal grooving of the pavement. Pavement grooving is a process where specially designed grooving machines equipped with circular diamond-tipped saw blades are used to saw discrete drainage channels into the pavement's surface. The blades are mounted and spaced on a horizontal shaft, and are cooled constantly by water pumped from a tanker, which is then recovered by an on-board vacuum system. These discrete channels can be constructed transversely or longitudinally into both concrete and asphalt surfaces. Research conducted by the California Department of Transportation (CALTRANS) shows that pavement grooving makes roadways safer concluding that grooved surfaces resulted in an overall decrease in accident rates of 69 percent on average for the highways studied, in both wet and dry conditions.

The project involved milling, paving and grooving, which were performed over the course of approximately three weeks. As the only approach from Northern Queens and Randall's

### TEAM MEMBERS

- MTA Bridges & Tunnels (Owner)
- Safety Grooving & Grinding, LP (Prime contractor)
- Tully Construction (Mill and overlay)

Island to Manhattan, work time for the FDR ramp was reduced to five hours or less. Daytime work took advantage of the unseasonably warm January weather. Other challenges included tight radius working zones and heavy traffic. Because the ramp was curved, several different sizes of machinery were used.

The total project cost was less than \$100,000 and was completed on January 10, 2012.

It has been proven that road conditions play a part in accidents. Grooving a road's surface will greatly improve wet weather traction and will significantly reduce accidents during inclement weather conditions.