

CASE STUDY

TRANSJAM HIGHWAYS - JAMAICA



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Transjamaican Highway Limited (TJH) is the concessionaire of TransJam Highways, formerly known as Highway 2000 East-West. This was Jamaica's inaugural toll road and remains the largest infrastructure project in the English-speaking Caribbean.

STRATEGIC IMPORTANCE AND NETWORK OVERVIEW

Highway 2000, Jamaica's first modern tolled motorway, is a landmark public-private partnership developed to transform national connectivity and support long-term economic growth. Opened in 2003 and delivered in multiple phases, it comprises a controlled-access road network of approximately 150 km.

The highway provides high-standard motorway links between Kingston and Portmore, extends west through Spanish Town and May Pen, and then connects northward to Ocho Rios, with future extensions planned toward Montego Bay.

CONCESSION STRUCTURE AND LONG-TERM ASSET RESPONSIBILITY

The project was implemented under a concession arrangement led by the Government of Jamaica through the National Road Operating and Constructing Company (NROCC), with Transjamaican Highway Limited (TJH) as the concessionaire for the East-West corridor.

The concession, originally awarded in 2001, is a long-term agreement of approximately 35 years, covering the design, construction, operation, maintenance and tolling of the motorway, and remains in effect into the mid-2030s.

PREVENTATIVE MAINTENANCE STRATEGY: ASPHALT PRESERVATION

In response, Transjamaican Highways Limited (TJH) incorporated Rhinophalt® Asphalt Preservation into its long-term pavement asset management strategy. Rhinophalt® is a preventative surface treatment that seals and protects the asphalt, reducing permeability and limiting environmental damage from UV exposure and moisture.

By strengthening the surface layer, the treatment helps slow deterioration on heavily trafficked motorway sections, extending pavement life, safeguarding capital investment and supporting a lower whole-life maintenance cost profile.

INITIAL TRIALS AND PROOF OF PERFORMANCE

In March 2014, the inaugural trials of the Rhinophalt® asphalt preservation system were conducted on Highway 2000 in Jamaica. These early experiments underscored the efficacy of preventative maintenance on this crucial toll road, paving the way for larger-scale projects in subsequent years.

OPERATIONAL, ASSET MANAGEMENT AND ROAD USER BENEFITS

For toll road concessionaires, proactive asphalt preservation using



CLIMATIC CHALLENGES AND PAVEMENT DETERIORATION RISK

Jamaica's asphalt pavements are subject to severe climatic stresses that accelerate surface deterioration. Prolonged exposure to intense sunlight and UV radiation, combined with consistently high temperatures often exceeding 30°C, drives oxidative ageing and hardening of the asphalt binder.

These effects are further intensified by heavy seasonal rainfall and tropical storm events, which promote water ingress and weaken the asphalt matrix. The combined influence of heat, UV and moisture significantly increases the risk of surface ravelling, cracking and pothole formation, making effective asphalt preservation essential.

SCALED IMPLEMENTATION AND LONG-TERM ADOPTION

Following several smaller trials and substantiated performance outcomes, approximately 250,000 m² of surface treatment were applied in 2025 across an 11 km stretch of two-lane dual carriageway west of Kingston.

The works were completed within a two-week programme, allowing efficient delivery during busy traffic periods while minimising lane closures, user delay and network disruption.

Asphalt preservation enabled TJH to intervene early in the pavement deterioration cycle, minimise disruption and defer more costly structural maintenance. The repeated use of Rhinophalt® over more than a decade reflects its value as a durable, proactive solution aligned with TJH's performance, safety and lifecycle objectives.

Rhinophalt® delivers significant benefits:

- Extends the service life of the asphalt surface, enabling deferral of at least one surface course intervention
- Reduces the frequency of major capital works by shifting maintenance from reactive to planned interventions
- Lowers the incidence of unplanned repairs and emergency patching
- Results in fewer major treatments, reducing lane closures and downtime
- Minimises traffic disruption and limits toll revenue loss
- Enhances road user satisfaction and safety through a smoother, more reliable network
- Improves whole-life cost performance and return on investment

