Highway Preservation with Microsurfaces.

CASE STUDY: PR 3 HIGHWAY, CANÓVANAS- CAROLINA, PUERTO RICO .

Eng. Estephania Amaya Diaz
Consultant

1. Name and business address of the ISSA Member contracting company and contact information for the person submitting the application.

Business Name:

C.I. Manufacturas y Procesos Industriales Limitada (MPI)

Business Address:

Ecoparque Natura Torre 1 Oficina 515, Floridablanca, Santander, Colombia.

Contact Information:

Estephania Amaya Diaz

Consultant

(+57) 310 217 7960

estephania@mpi-ac.com

2. Information that assures each of the eligibility requirements are met.

- Contract Award Confirmation: Consulting Services from MPI Ltda. for Puerto Rico Asphalt.

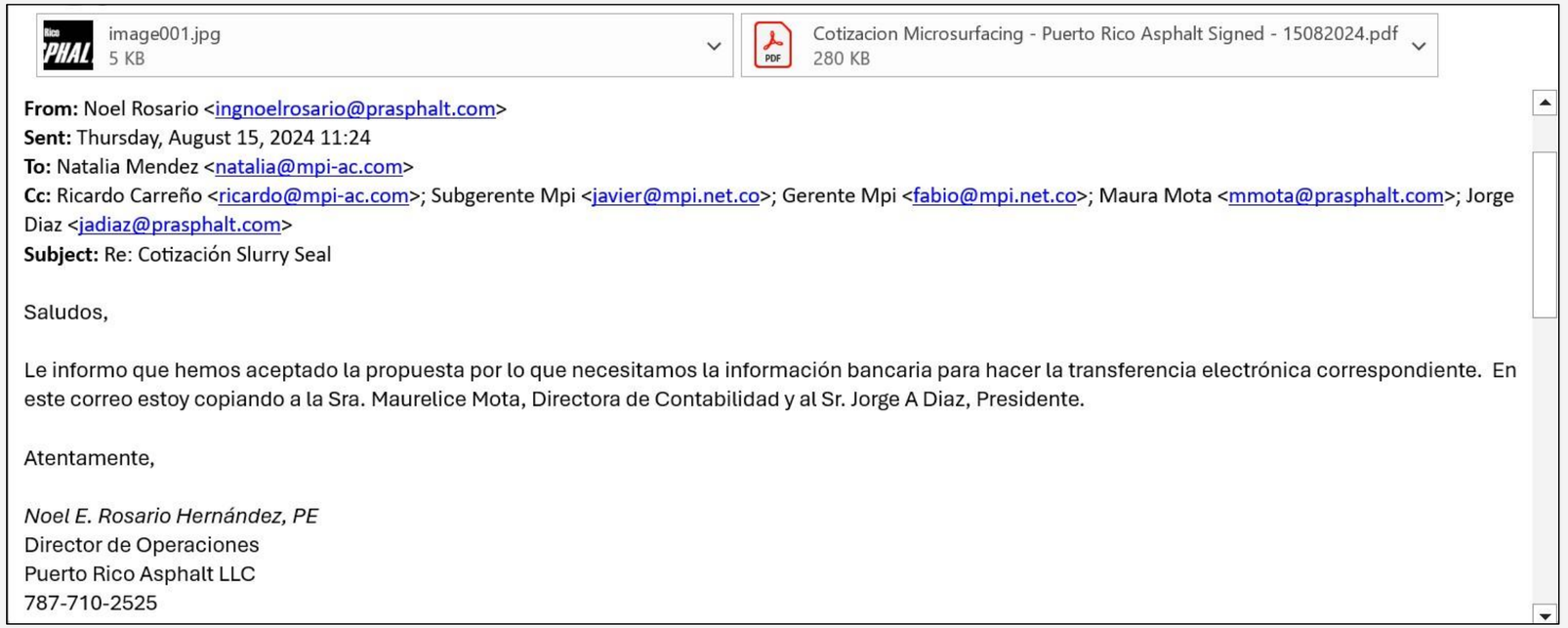

image001.jpg
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Cotizacion Microsurfacing - Puerto Rico Asphalt Signed - 15082024.pdf
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From: Noel Rosario <ingnoelrosario@prasphalt.com>
Sent: Thursday, August 15, 2024 11:24
To: Natalia Mendez <natalia@mpi-ac.com>
Cc: Ricardo Carreño <ricardo@mpi-ac.com>; Subgerente Mpi <javier@mpi.net.co>; Gerente Mpi <fabio@mpi.net.co>; Maura Mota <mmota@prasphalt.com>; Jorge Diaz <jadiaz@prasphalt.com>
Subject: Re: Cotización Slurry Seal

Saludos,

Le informo que hemos aceptado la propuesta por lo que necesitamos la información bancaria para hacer la transferencia electrónica correspondiente. En este correo estoy copiando a la Sra. Maurelice Mota, Directora de Contabilidad y al Sr. Jorge A Diaz, Presidente.

Atentamente,

Noel E. Rosario Hernández, PE
Director de Operaciones
Puerto Rico Asphalt LLC
787-710-2525

2. Information that assures each of the eligibility requirements are met.

Attachments:

- Certificate of final Project acceptance- File No. 1

3. Regarding the roadway upon which the treatment(s) is performed:

The name of the roadway and/or its numerical designation:

PR 3 Highway, Canóvanas- Carolina, Puerto Rico.

Contact information for the agency or organization responsable for the Project:

Puerto Rico Asphalt Llc.
Noel Rosario
ingnoelrosario@prasphalt.com

3. Regarding the roadway upon which the treatment(s) is performed:

The specific location of the project:

Location on Google Maps

Map or driving directions to the project site:

Details Attached - File No. 2

3. Regarding the roadway upon which the treatment(s) is performed:

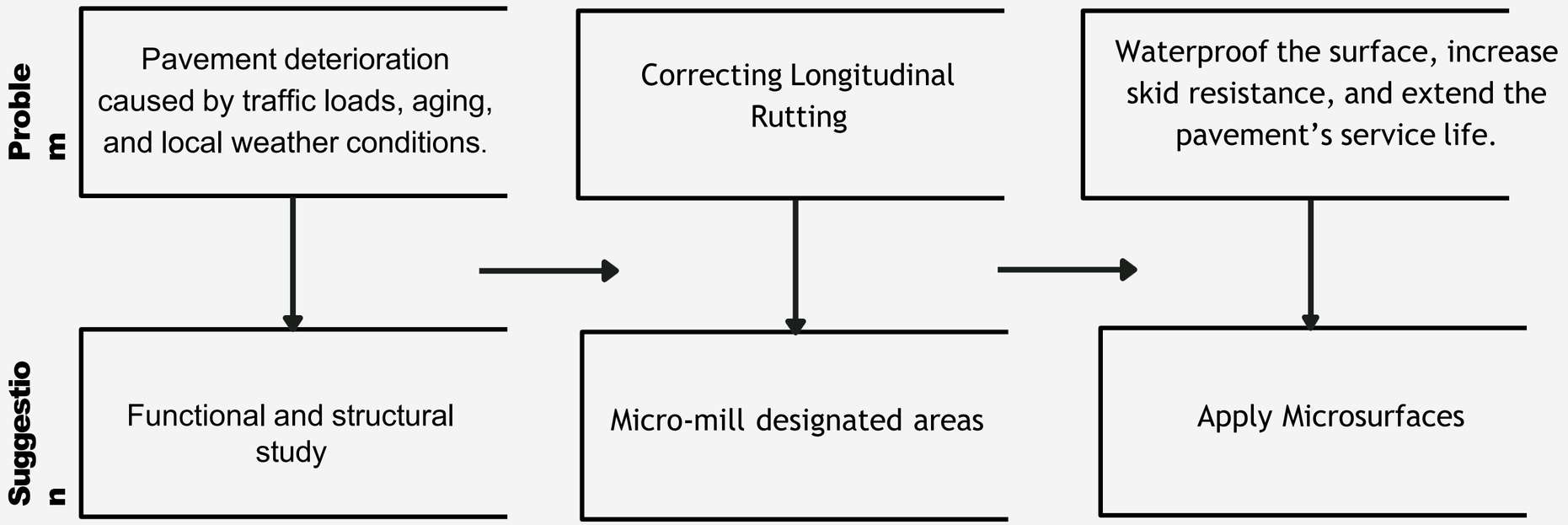
A written description of the roadway outlining the need for the treatments:

The evaluated segment covers the PR-3 dual carriageway between Canóvanas and Carolina, a high-traffic corridor featuring three lanes plus shoulders per direction and a platform width of approximately 15 meters.

While the pavement remains structurally sound, the surface shows functional wear due to traffic, aging, and local climate conditions. Following the previously recommended and successfully performed micro-milling, the roadway is now suitable for microsurfacing application.

This preventive maintenance treatment will restore surface texture and skid resistance, thereby extending the pavement's service life.

3. Regarding the roadway upon which the treatment(s) is performed:



3. Regarding the roadway upon which the treatment(s) is performed:

Relevant information on the roadway (such as the construction and maintenance history, ADT or traffic type and volume)

Project Details

- Evaluated Segment: Dual Carriageway between Canóvanas and Carolina.
- Segment Area:20.000m2
- Configuration: 2 to 3 lanes + shoulder per direction.
- Platform width: 15m
- Topography: Linear alignment, low gradient.
- Functional Classification: Principal arterial. High mobility urban/suburban corridor.
- Average Daily Traffic (ADT): 25.000-40.000 Vehicles/ day (both directions).
- Climatic Conditions: Tropical marine climate; High humidity, intense solar radiation and frequent rainfall

4. At least 5 but no more tan 10 high quality photographs, suitable for publication, adequately representing the pavement prior to the treatment(s) being applied, the application process, and the completed Project after it has been returned to traffic.

Following Slides


BEFORE


BEFORE

DURING

DURING


AFTER


MPI

5. Relevant information such as:

Copy of the mix design used on the project:
The mix design was carried out by the MPI Lab – MPI-AST-408
(For more details please find the attached File No.3).

Copy of the specifications used to govern the project, including design and raw materials:
ISSA A-143: Recommended Performance Guideline for Micro Surfacing
(For more details please find the attached File No.4).

5. Relevant information such as:

List of raw materials and the suppliers of those materials:

Supplier	Company Identification number	Product	Location
Manufacturas y Procesos Industriales - MPI Ltda.	NIT. 890 204 814 - 4	Emulsified Asphalt	Barrancabermeja, Colombia
Puerto Rico Asphalt Llc.	TAX ID NUMBER. 66-0683606	Crushed stone	Carolina, Puerto Rico.

6. A descriptive summary of the project detailing the job and any key issues that led to the job's completion is required.

Introduction of a New Preservation Technology.

The project marked the first application of microsurfacing on a highway in Puerto Rico, requiring the adaptation of construction procedures and quality-control protocols to an untested technology within the local network.

Limited Local Expertise.

To ensure proper technical execution, the project engaged a specialized foreign firm to perform the initial work while providing structured on-site training for the client's team.

6. A descriptive summary of the project detailing the job and any key issues that led to the job's completion is required.

Lack of Specialized Equipment

As no microsurfacing equipment was available in Puerto Rico, the client procured and imported a BERKCAMP machine, addressing logistical, regulatory, and commissioning requirements prior to deployment.

Aggregate Production Adjustments

Meeting the project’s technical specifications required producing aggregates with precise gradation and performance parameters, necessitating additional controls and coordination with local suppliers.

6. A descriptive summary of the project detailing the job and any key issues that led to the job's completion is required.

Development of a High-Performance Emulsion.

A tailored high-performance emulsion was formulated to match local aggregate characteristics. Since no comparable product was available on the island, the material was produced and imported from Colombia to ensure compliance and field reliability.

7. A statement outlining the reasons the submitted project should receive an award.

The PR-3 Highway Microsurfacing Initiative, led by C.I. MPI Ltda., is a strong candidate for the ISSA 2026 International Award of Excellence because it demonstrates how global teamwork can bring real innovation and lasting value to a region.

This project was carried out on one of Puerto Rico's busiest highways, faced sudden tropical rain, and was under the eyes of more than 30 auditors and non believers, who joined us on the road as they were eager to learn. To address the lack of local experience with microsurfacing, MPI worked to bring together ISSA members from the United States and Colombia, to combine expertise in equipment, application, emulsion formulation, and additives. The team designed a customized technical approach, completed the first microsurfacing project, and trained local crews to ensure long-term capability.

What makes this initiative truly remarkable is the legacy it leaves behind. Beyond improving the pavement, it helped establish a new technical capacity in the region and showcased how the ISSA network can elevate standards and open new possibilities. For its innovation, collaboration, and lasting impact, this project is a deserving candidate for recognition.